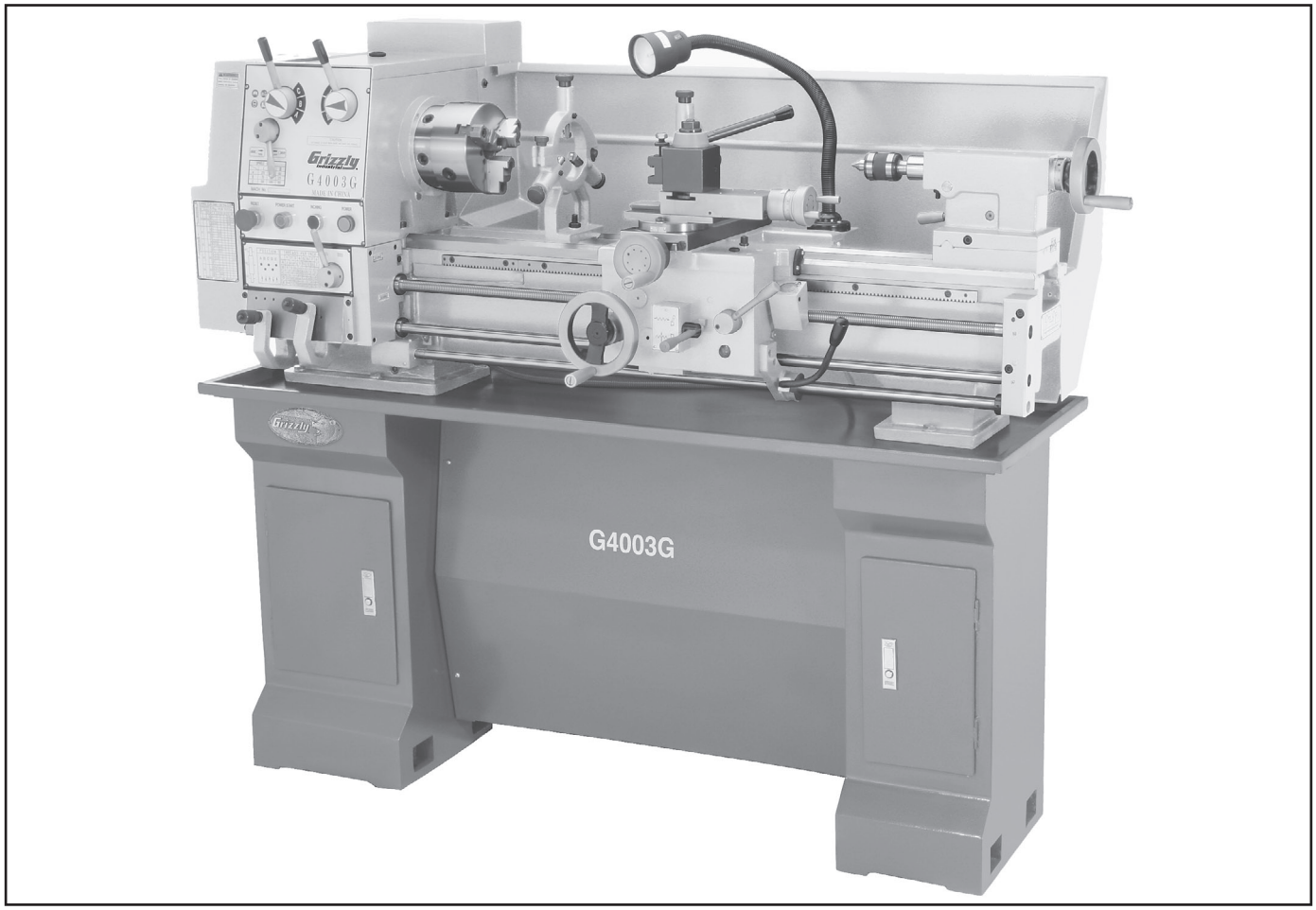
MODEL G4003G
GUNSMITH'S LATHE
OWNER'S MANUAL



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#CRTRTS9327 PRINTED IN CHINA

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance and service of this machine/equipment.

Failure to read, understand and follow the instructions given in this manual may result in serious personal injury, including amputation, electrocution or death.

The owner of this machine/equipment is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, blade/cutter integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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INTRODUCTION

Foreword

We are proud to offer the Model G4003G Gunsmith's Lathe. This machine is part of a growing Grizzly family of fine metalworking machinery. When used according to the guidelines set forth in this manual, you can expect years of trouble-free, enjoyable operation and proof of Grizzly's commitment to customer satisfaction.

We are pleased to provide this manual with the Model G4003G. It was written to guide you through assembly, review safety considerations, and cover general operating procedures. It represents our effort to produce the best documentation possible.

The specifications, drawings, and photographs illustrated in this manual represent the Model G4003G as supplied when the manual was prepared. However, owing to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly. For your convenience, we always keep current Grizzly manuals available on our website at **www.grizzly.com**. Any updates to your machine will be reflected in these manuals as soon as they are complete. Visit our site often to check for the latest updates to this manual!

Contact Info

If you have any comments regarding this manual, please write to us at the address below:

Grizzly Industrial, Inc.
C/O Technical Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

We stand behind our machines. If you have any service questions or parts requests, please call or write us at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
Fax: (800) 438-5901
E-Mail: techsupport@grizzly.com
Web Site: http://www.grizzly.com

MACHINE DATA SHEET

Customer Service #: (570) 546-9663 · To Order Call: (800) 523-4777 · Fax #: (800) 438-5901

MODEL G4003G
GUNSMITH'S BENCH TOP LATHE WITH STAND

Product Dimensions:

Weight..... 1213 lbs.
Length/Width/Height..... 61 x 26 x 54-1/2 in.
Foot Print (Length/Width)..... 57-1/2 x 14-1/2 in.

Shipping Dimensions:

Type..... Wood Crate
Content..... Machine
Weight..... 1500 lbs.
Length/Width/Height..... 65 x 30 x 61 in.

Electrical:

Switch..... On/Off Reverse
Switch Voltage..... 220V
Cord Length..... 5-1/2 ft.
Cord Gauge..... 14 gauge
Recommended Breaker Size..... 15 amp
Plug..... No

Motors:

Main

Type..... TEFC Capacitor Start Induction
Horsepower..... 2 HP
Voltage..... 220V
Prewired..... 220V
Phase..... Single
Amps..... 12A
Speed..... 1725 RPM
Cycle..... 60 Hz
Number Of Speeds..... 1
Power Transfer ..... Twin V-Belt to Gear
Bearings..... Shielded and Lubricated for Life

Main Specifications:

Operation Info

Swing Over Bed..... 12 in.
Dist Between Centers..... 36 in.
Swing Over Cross Slide..... 7 in.
Swing Over Saddle..... 11-11/32 in.
Swing Over Gap..... 17 in.
Max Tool Bit Size..... 5/8 in.
Compound Travel..... 3-1/4 in.
Carriage Travel..... 24 in.
Cross Slide Travel..... 6-1/4 in.

The information contained herein is deemed accurate as of 11/12/2007 and represents our most recent product specifications. Due to our ongoing improvement efforts, this information may not accurately describe items previously purchased.

Headstock Info

Spindle Bore	1-5/8 in.
Spindle Size	3-1/4 in.
Spindle Taper	MT#5
No Of Spindle Speeds	9
Range Of Spindle Speeds	70, 200, 220, 270, 360, 600, 800, 1000, 1400 RPM
Spindle Type	D1-5 Cam Lock
Spindle Bearings	High Precision Tapered Roller

Tailstock Info

Tailstock Travel	4 in.
Tailstock Taper	MT#3
Tailstock Barrel Diameter	1-9/16 in.

Threading Info

No Of Inch Threads	40
Range Of Inch Threads	4 - 112 TPI
Range Of Longitudinal Feeds	0.0011 - 0.031 in.
No Of Longitudinal Feeds	40
No Of Cross Feeds	40
Range Of Cross Feeds	0.0004 - 0.0105 in./rev.
No Of Metric Threads	29
Range Of Metric Threads	0.2 - 4.5 mm

Dimensions

Bed Width	7-1/4 in.
Leadscrew TPI	8
Leadscrew Length	44 in.
Steady Rest Capacity	3/16 - 2 in.
Follow Rest Capacity	1/4 - 1 in.
Faceplate Size	10 in.
Leadscrew Diameter	0.870 in.
Feed Rod Diameter	0.780 in.
Floor To Center Height	46-1/4 in.

Construction

Base Construction	Cast Iron
Headstock Construction	Cast Iron
Headstock Gears Construction	Flame Hardened Steel
Bed Construction	Induction Hardened Cast Iron
Body Construction	Cast Iron
Stand Construction	Cast Iron
Paint	Epoxy

Other

Kilowatt Output	1.119

Other Specifications:

Country Of Origin	China
Warranty	1 Year
Serial Number Location	ID Label on Headstock
Assembly Time	1-1/2 hours

03G *The information contained herein is deemed accurate as of 11/12/2007 and represents our most recent product specificatior*
Due to our ongoing improvement efforts, this information may not accurately describe items previously purchased.

Identification

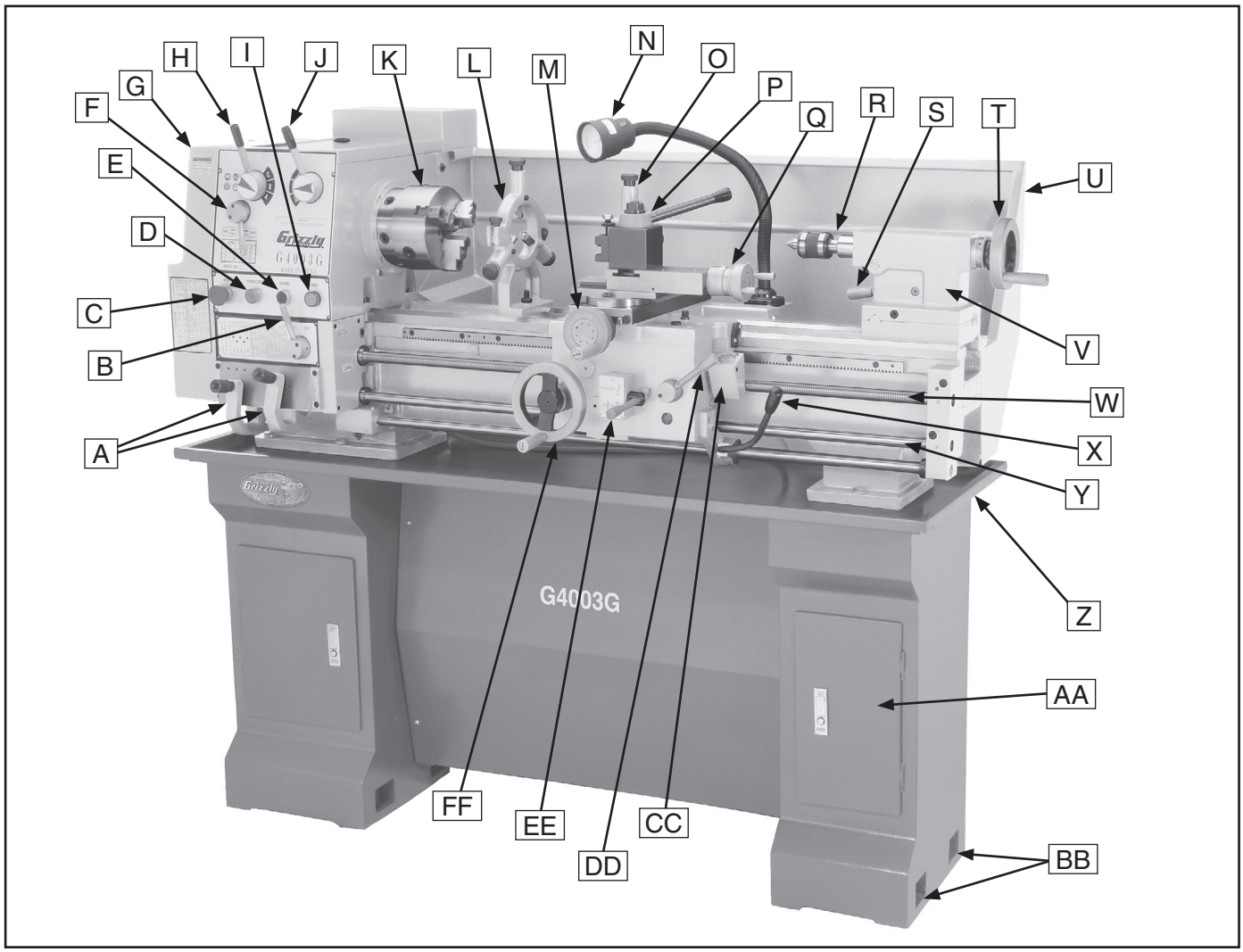


Figure 1. Model G4003G identification.

A. Quick Change Gearbox Levers
B. Feed Rod Lever
C. Emergency Stop/RESET Button
D. POWER START Button
E. Inching/Jog Button
F. Feed Direction Lever
G. Gear and Belt Cover
H. Spindle Speed Lever (Alpha)
I. Power Light
J. Spindle Speed Lever (Numeric)
K. 3-Jaw Chuck
L. Steady Rest
M. Cross Feed Handwheel
N. Halogen Work Light
O. Follow Rest
P. Tool Rest
Q. Compound Rest Handwheel
R. Tailstock Spindle and Center
S. Tailstock Spindle Lock Lever
T. Tailstock Spindle Handwheel
U. Back Splash Guard
V. Tailstock
W. Lead Screw
X. Spindle ON/OFF Lever
Y. Feed Rod
Z. Chip Tray
AA. Storage Cabinet
BB. Stand Mounting Points
CC. Thread Dial
DD. Half-nut Lever
EE. Apron/Cross Feed Lever
FF. Carriage Handwheel

SECTION 1: SAFETY

⚠WARNING

For Your Own Safety, Read Instruction Manual Before Operating this Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

⚠DANGER **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **This symbol is used to alert the user to useful information about proper operation of the machine.**

⚠WARNING

Safety Instructions for Machinery

1. **READ THE ENTIRE MANUAL BEFORE STARTING MACHINERY.** Machinery presents serious injury hazards to untrained users.

2. **ALWAYS USE ANSI APPROVED SAFETY GLASSES WHEN OPERATING MACHINERY.** Everyday eyeglasses only have impact resistant lenses—they are NOT safety glasses.

3. **ALWAYS WEAR A NIOSH APPROVED RESPIRATOR WHEN OPERATING MACHINERY THAT PRODUCES DUST.** Most types of dust (wood, metal, etc.) can cause severe respiratory illnesses.

4. **ALWAYS USE HEARING PROTECTION WHEN OPERATING MACHINERY.** Machinery noise can cause permanent hearing loss.

5. **WEAR PROPER APPAREL.** DO NOT wear loose clothing, gloves, neckties, rings, or jewelry that can catch in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.

6. **NEVER OPERATE MACHINERY WHEN TIRED OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Be mentally alert at all times when running machinery.

⚠WARNING
Safety Instructions for Machinery

7. **ONLY ALLOW TRAINED AND PROPERLY SUPERVISED PERSONNEL TO OPERATE MACHINERY.** Make sure operation instructions are safe and clearly understood.

8. **KEEP CHILDREN AND VISITORS AWAY.** Keep all children and visitors a safe distance from the work area.

9. **MAKE WORKSHOP CHILDPROOF.** Use padlocks, master switches, and remove start switch keys.

10. **NEVER LEAVE WHEN MACHINE IS RUNNING.** Turn power ***OFF*** and allow all moving parts to come to a complete stop before leaving machine unattended.

11. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** DO NOT use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.

12. **KEEP WORK AREA CLEAN AND WELL LIGHTED.** Clutter and dark shadows may cause accidents.

13. **USE A GROUNDED EXTENSION CORD RATED FOR THE MACHINE AMPERAGE.** Grounded cords minimize shock hazards. Undersized cords create excessive heat. Always replace damaged extension cords.

14. **ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING MACHINERY**. Make sure switch is in OFF position before reconnecting.

15. **MAINTAIN MACHINERY WITH CARE.** Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16. **MAKE SURE GUARDS ARE IN PLACE AND WORK CORRECTLY BEFORE USING MACHINERY.**

17. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make a habit of checking for keys and adjusting wrenches before turning machinery ***ON***.

18. **CHECK FOR DAMAGED PARTS BEFORE USING MACHINERY.** Check for binding or misaligned parts, broken parts, loose bolts, and any other conditions that may impair machine operation. Repair or replace damaged parts before operation.

19. **USE RECOMMENDED ACCESSORIES.** Refer to the instruction manual for recommended accessories. Improper accessories increase risk of injury.

20. **DO NOT FORCE MACHINERY.** Work at the speed for which the machine or accessory was designed.

21. **SECURE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.

22. **DO NOT OVERREACH.** Maintain stability and balance at all times.

23. **MANY MACHINES CAN EJECT WORKPIECES TOWARD OPERATOR.** Know and avoid conditions that cause the workpiece to "kickback."

24. **ALWAYS LOCK MOBILE BASES (IF USED) BEFORE OPERATING MACHINERY**.

25. **CERTAIN DUST MAY BE HAZARDOUS** to the respiratory systems of people and animals, especially fine dust. Be aware of the type of dust you are exposed to and always wear a respirator designed to filter that type of dust.

⚠WARNING
Additional Safety Instructions for Lathes

1. **UNDERSTANDING THE MACHINE:** Read and understand this manual before operating machine.

2. **CLEANING MACHINE:** To avoid entanglement and lacerations, do not clear chips by hand. Use a brush, and never clear chips while the lathe is operating.

3. **USING CORRECT TOOLING:** Always select the right cutter for the job, and make sure cutters are sharp. The right tool decreases strain on the lathe components and reduces the risk of unsafe cutting.

4. **ELIMINATING A PROJECTILE HAZARD:** Always remove the chuck key, and never walk away from the lathe with the chuck key installed.

5. **SECURING A WORKPIECE:** Make sure workpiece is properly held in chuck before starting lathe. A workpiece thrown from the chuck could cause severe injury.

6. **AVOIDING OVERLOADS:** Always use the appropriate feed and speed rates.

7. **MAINTAINING A SAFE WORKPLACE:** Never leave lathe unattended while it is running.

8. **PREVENTING A CUTTING TOOL/CHUCK CRASH:** Always release automatic feeds after completing a job.

9. **AVOIDING STARTUP INJURIES:** Make sure workpiece, cutting tool, and tool post have adequate clearance before starting lathe. Check chuck clearance and saddle clearance before starting the lathe. Make sure spindle RPM is set correctly for part diameter before starting the lathe. Large parts can be ejected from the chuck if the chuck speed is set too high.

10. **CHUCK SAFETY:** Chucks are surprisingly heavy and awkward to hold, so protect your hands and the lathe ways. Always use a chuck cradle or piece of plywood over the lathe ways.

11. **WORKPIECE SUPPORT:** Support a long workpiece if it extends from the headstock so it will not wobble violently when the lathe is turned ***ON***. If workpiece extends more than 2.5 times its diameter from the chuck, support it by a center or steady rest, or it may deflect and fall out of the chuck while cutting.

12. **AVOIDING ENTANGLEMENT INJURIES:** Never attempt to slow or stop the lathe chuck or mill spindle by hand; and tie back long hair, ponytails, loose clothing, and sleeves so they do not dangle.

⚠WARNING

Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

Glossary of Terms

The following is a list of common definitions, terms and phrases used throughout this manual as they relate to this lathe and metalworking in general. Become familiar with these terms for assembling, adjusting or operating this machine. Your safety is **VERY** important to us at Grizzly!

Arbor: A machine shaft that supports a cutting tool.

Backlash: Wear in a screw or gear mechanism that may result in slippage, vibration, and loss of tolerance.

Carriage: A main housing that consists of the apron and the saddle.

Cross Slide: A fixture attached to the lathe carriage that holds the compound rest and can be moved in and out.

Compound Rest: A fixture attached to the cross slide that holds the tool holder and can be moved in and out.

Cutting Speed: The distance that a point on a cutter moves in one minute, expressed in meters or feet per minute.

Dial Indicator: An instrument used in setup and inspection work that shows on a dial the amount of error in size or alignment of a part.

Facing: In lathe work, cutting across the end of a workpiece, usually to machine a flat surface.

Feed: The movement of a cutting tool into a workpiece.

Gib: A tapered wedge located along a sliding member to take up wear or to ensure a proper fit.

Headstock: The major lathe component that houses the spindle and motor drive system to turn the workpiece.

Lathe Center: A lathe accessory with a 60° point which is inserted into the headstock or tailstock of the lathe and is used to support the workpiece.

Leadscrew: The long screw that is driven by the end gears and supplies power to the carriage.

Saddle: The upper portion of carriage that rides on the lathe ways and supports the cross feed and the follow rest.

Spindle: The revolving shaft that holds and drives the workpiece.

Tailstock: A moveable fixture opposite of the headstock on a lathe that has a spindle used to support one end of a workpiece and for holding tools.

Tool Post: The part of the compound rest that holds the tool holder.

Turret: A machine fixture that holds multiple tools and can be revolved and indexed to position.

Ways: The precision machined and flat tracks on which the carriage and tailstock slide.

SECTION 2: CIRCUIT REQUIREMENTS

220V Single-Phase

⚠WARNING

Serious personal injury could occur if you connect the machine to the power source before you have completed the set up process. DO NOT connect the machine to the power source until instructed to do so.

Amperage Draw

The Model G4003G motor draws the following amps under maximum load:

Motor Draw at 220V ..... 9 Amps

Circuit Requirements

We recommend connecting your machine to a dedicated and grounded circuit that is rated for the amperage given below. Never replace a circuit breaker on an existing circuit with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. **If you are unsure about the wiring codes in your area or you plan to connect your machine to a shared circuit, consult a qualified electrician.**

Minimum Power Supply Circuit ..... 15 Amps

Plug/Receptacle Type

Recommended Plug/Receptacle .....NEMA 6-15

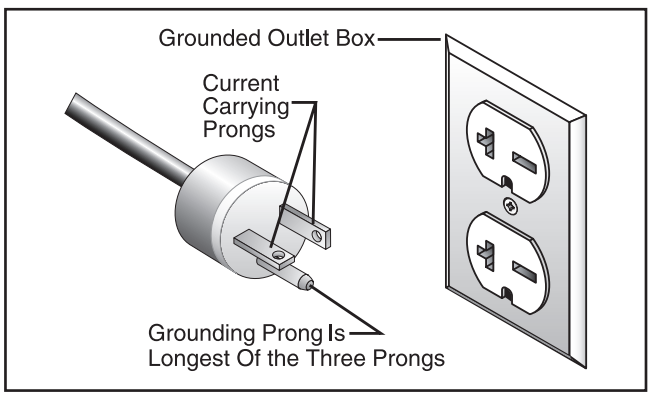


Figure 2. NEMA 6-15 plug and receptacle.

Grounding

In the event of an electrical short, grounding reduces the risk of electric shock. The grounding wire in the power cord must be properly connected to the grounding prong on the plug; likewise, the outlet must be properly installed and grounded. All electrical connections must be made in accordance with local codes and ordinances.

⚠WARNING

Electrocution or fire could result if this machine is not grounded correctly or if your electrical configuration does not comply with local and state codes. Ensure compliance by checking with a qualified electrician!

Extension Cords

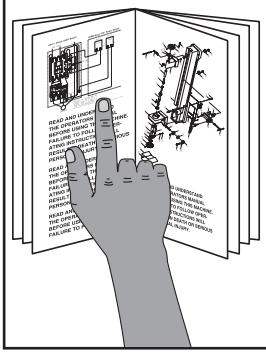
We do not recommend the use of extension cords. Instead, arrange the placement of your equipment and the installed wiring to eliminate the need for extension cords.

If you find it absolutely necessary to use an extension cord at 220V with your machine:

- Use at least a 14 gauge cord that does not exceed 50 feet in length!
- The extension cord must also contain a ground wire and plug pin.
- A qualified electrician MUST size cords over 50 feet long to prevent motor damage.

SECTION 3: SETUP

Setup Safety

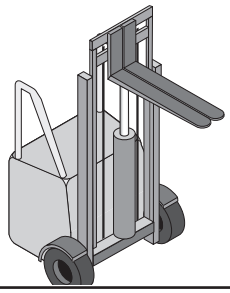


⚠WARNING

This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the machine!

⚠WARNING

Wear safety glasses during the entire set up process!



⚠WARNING

This machine and its components are very heavy. Use power lifting equipment such as a fork lift or hoist to move heavy items.

Items Needed for Setup

The following items are needed to complete the setup process, but are not included with your machine:

Description	Qty
• Fork Lift or Hoist (Rated 2000 lbs.)	1
• Lifting Straps (Rated 2000 lbs.)	1
• Lifting Hooks (Rated 2000 lbs.)	1
• Machinist's Level	1
• Degreaser/Solvent Cleaner	as needed
• Shop Rags for Cleaning	as needed

Unpacking

Your machine was carefully packaged for safe transportation. Disassemble the crate and remove the packaging materials from around your machine to inspect it. If you discover the machine is damaged, *please immediately call Customer Service at (570) 546-9663 for advice.*

Save the containers and all packing materials for possible inspection by the carrier or its agent. *Otherwise, filing a freight claim can be difficult.*

When you are completely satisfied with the condition of your shipment, inventory the contents.

Inventory

After all the parts have been removed from the boxes, the following items should accompany your machine:

Major Components (Figure 3) **Qty.**

A. 6" Three-Jaw Chuck w/Jaws 1
B. Steady Rest 1
C. Follow Rest 1
D. Quick Change Tool Post 1
E. Cabinet Base:
Cabinets (Left & Right) 2
Front Panel 1
Front Panel Brackets 2

Loose Components (Figure 4)

F. 8" Four-Jaw Universal Chuck 1
G. 10" Faceplate 1
H. Oil Bottle 1
I. Tool Box 1
J. Three-Jaw Chuck Jaws 3
K. Tailstock Wrench 1
L. 3- and 4-Jaw Chuck Wrenches ..... 1 ea
M. Square Socket T-Wrench 1
N. Quick Change Tool Holder 1
O. Change Gears 1
—Gear 27-tooth 1
—Gear 26-tooth 1
—Gear 35-tooth 1
—Gear 40-tooth (Installed) 2
—Gear 45-tooth 1
—Gear 50-tooth 1
—Gear 60-tooth 1
—Gear 86/91-tooth (Installed) 1
P. Hex Wrench Set 2, 4, 5, 6, 8, 10 mm ... 1 ea
Q. Wrenches 9/11, 10/12, 12/14, 17/19mm ..... 1 ea
R. Handwheel Handles 2
S. Dead Center Spindle Sleeve 1
T. Arbor B16 to MT#3 1
U. Standard Dead Center MT#3 1
V. Carbide Tipped Dead Center MT#3 1
W. Live Center MT#3 1
X. #2 Phillips & Standard Screwdrivers ..... 1 ea
Y. Drill Chuck B16 1.5-13mm 1
Z. Drill Chuck Key 1
AA. Spider Screws 4
BB. Cabinet Base Fasteners:
—Hex Bolts M12-1.75 x 40 6
—Flat Washers 12mm 6
—Phillips Head Screws M6-1 x 10 12
—Hex Nuts M6-1 4
—Flat Washers 6mm 12

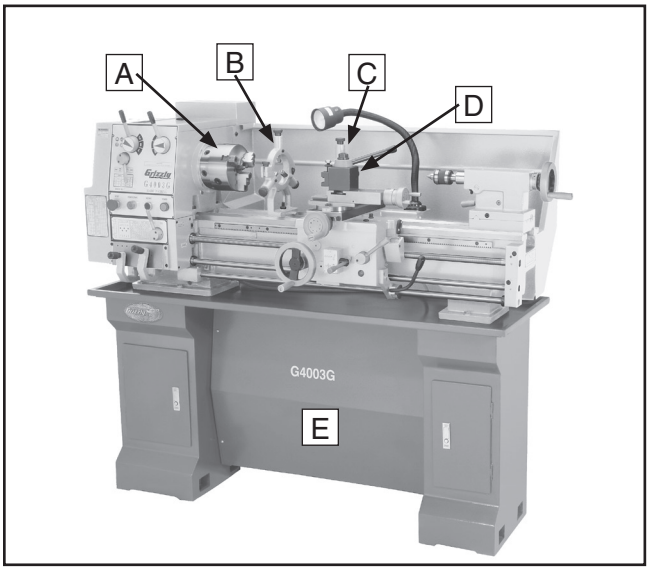


Figure 3. Installed components.

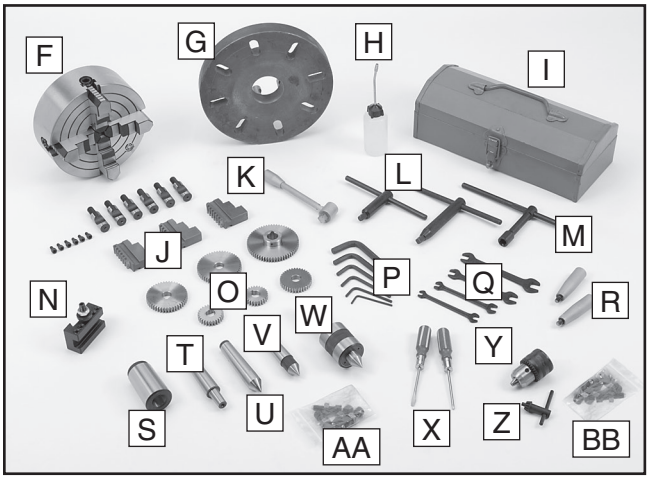


Figure 4. Packaged components.

NOTICE

Some hardware/fasteners on the inventory list may arrive pre-installed on the machine. Check these locations before assuming that any items from the inventory list are missing.

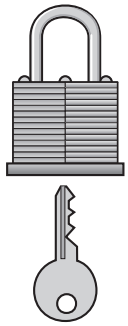
Site Considerations

Floor Load

Your lathe is a heavy load distributed in a small footprint. Place this machine on concrete floors only. The floor MUST be level, or the lathe frame and ways may distort over time.

Placement Location

Consider existing and anticipated needs, service panel access, length of rods to be loaded into the lathe, and space for auxiliary stands, work tables or other machinery when establishing a location for your lathe (see **Figure 5** for minimum wall clearances).



⚠CAUTION

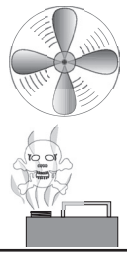
Children and visitors may be seriously injured if unsupervised. Lock all entrances to the shop when you are away. DO NOT allow unsupervised children or visitors in your shop at any time!

Clean Up

The unpainted surfaces are coated with a waxy oil to prevent corrosion during shipment. Remove this protective coating with a solvent cleaner or citrus-based degreaser such as Grizzly's G7895 Citrus Degreaser. To clean thoroughly, some parts must be removed.

⚠WARNING

Gasoline and petroleum products have low flash points and can explode or cause fire if used to clean machinery. DO NOT use these products to clean the machinery.



⚠CAUTION

Many cleaning solvents are toxic if inhaled. Minimize your risk by only using these products in a well ventilated area.

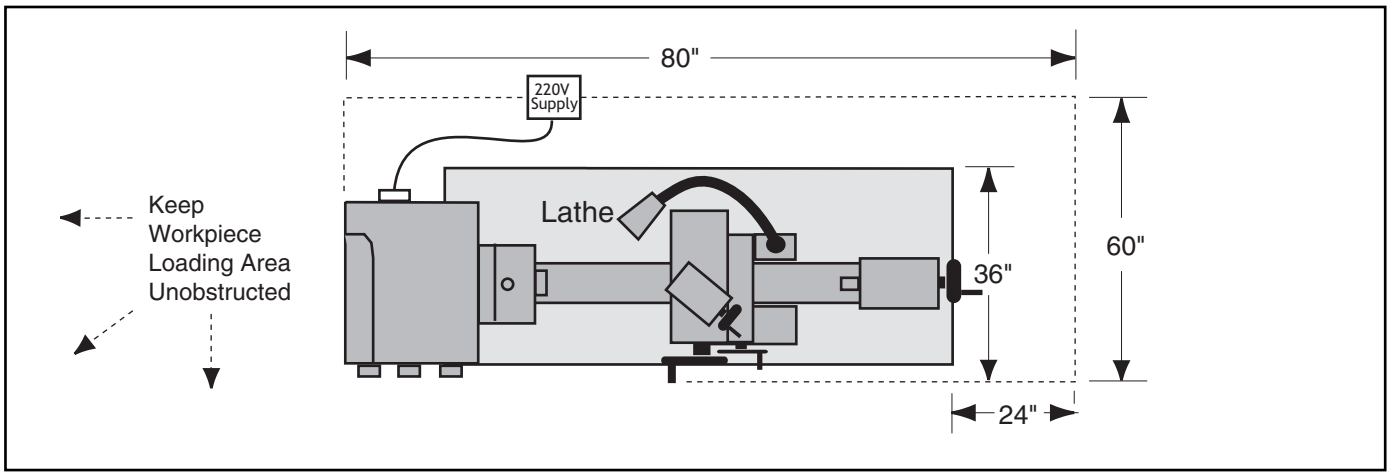


Figure 5. Minimum wall clearances.

Mounting to Shop Floor

We recommend that you bolt your lathe to the floor. Because floor materials may vary, floor mounting hardware is not included. Since this is a precision machine, it is important to level the machine with a precision level when mounting.

Bolting to Concrete Floors

Lag shield anchors with lag bolts (**Figure 6**) and anchor studs (**Figure 7**) are two popular methods for anchoring an object to a concrete floor. We suggest you research the many options and methods for mounting your machine and choose the best that fits your specific application.

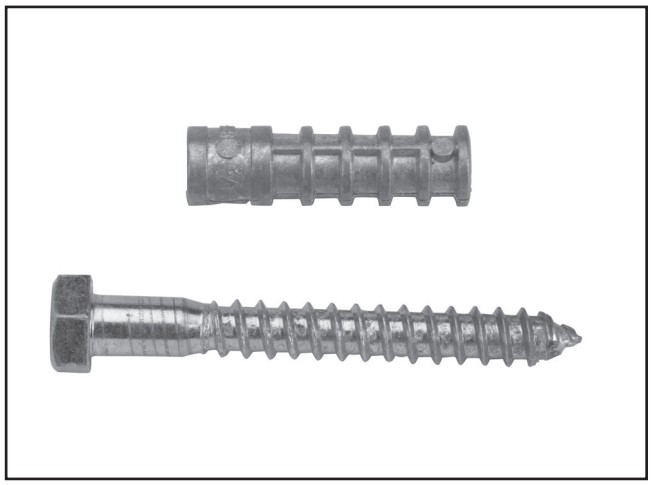


Figure 6. Typical lag shield anchor and lag bolt.

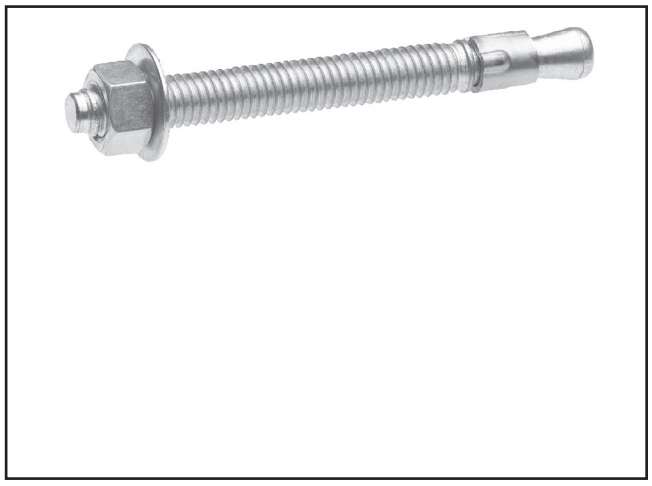


Figure 7. Typical anchor stud.

Cabinet Base Assembly

Refer to the **Base** parts breakdown on **Page 61** for a detailed illustration and parts identification during the following assembly.

To assembly the cabinet base:

1. Prepare the lathe location, and drill the holes for your floor mounting fasteners.

2. Position the left and right cabinets approximately 34" apart in the prepared location.

3. Secure the front panel brackets to the cabinets with four M6-1 x 10 Phillips head screws and flat washers.

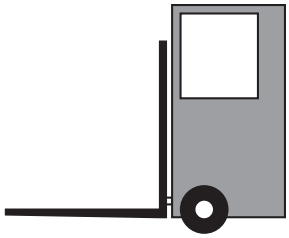
4. Install the front panel onto the panel brackets with four M6-1 x 10 Phillips head screws, flat washers, and hex nuts.

5. With the cabinet base securely resting on the floor at your location, shim between the floor and base as required to make the base assembly level from side-to-side and front-to-back as indicated with a level.

6. Secure the cabinet base to the floor, but DO NOT overtighten the fasteners.

Lifting & Moving

⚠WARNING



You will need power lifting equipment and assistance to lift this machine and position it. Inspect all lifting equipment to make sure it is in perfect working order and is rated for the load before attempting to lift and move this lathe. Ignoring this warning may lead to serious personal injury or death.

To lift and move the lathe:

1. Wrap two lifting straps around the bedway pedestals and route them behind the feed rod, control rod, and the lead screw, as shown in **Figure 8.**

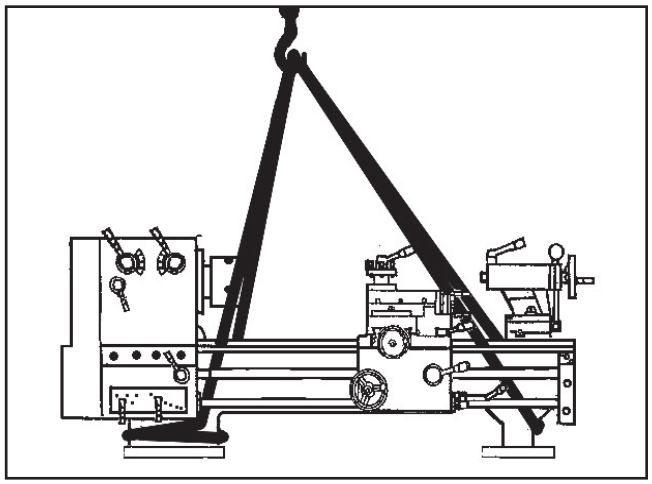


Figure 8. Lifting strap locations.

2. Move the apron toward the right to help balance the load, as shown in **Figure 8**.

3. Position the chip pan on top of the base assembly so that the six lathe mounting holes align with top holes of the cabinets.

4. Un-bolt the lathe from the pallet**.**

5. Slowly raise the lathe from the pallet, and move it over the cabinet base at your prepared location.

6. Position the lathe so that the six M12-1.75 x 40 hex bolts and flat washers can be inserted through the chip pan and partially threaded, but not fully tightened, into the mounting holes of the cabinets (see **Figure 9**).

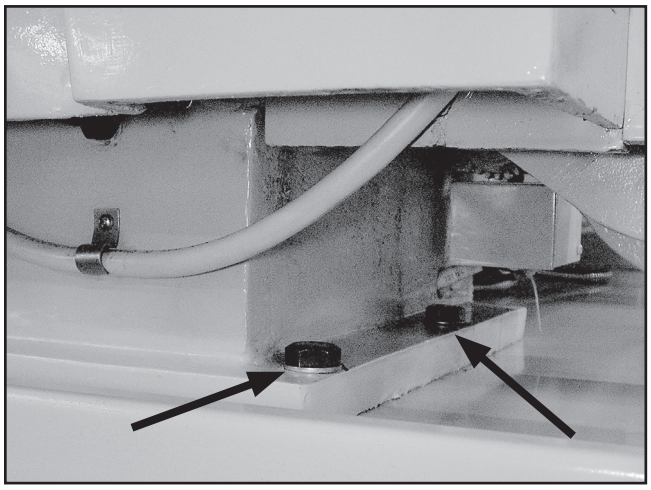


Figure 9. Lathe mounting hex bolts.

7. Shim between the lathe and cabinet base as required to make the ways level at all four corner locations as indicated with a machinist's level.

8. Fully tighten the six hex bolts to secure the lathe to the cabinet base.

9. For best results, recheck the ways in 24 hours to make sure the ways are still level and have not twisted, and re-shim as required.

10. Install the backsplash with four M6-1 x 10 Phillips head screws and flat washers, as illustrated in the **Lathe Bed & Motor** parts breakdown on **Page 60**.

Test Run & Break-In

NOTICE

NEVER shift lathe gears when lathe is operating, and make sure both the half-nut lever and the feed lever are disengaged before you start the lathe! Otherwise the lathe will feed the apron into the chuck or tailstock causing severe lathe damage.

The purpose of the test run is to make sure the lathe and its safety features operate correctly.

To begin the test run & break-in procedure:

1. Make sure the lathe is lubricated and the headstock oil level is full. Refer to **Lubrication** on **Page 33**.

2. Make sure the chuck is correctly secured to the spindle. Refer to **Mounting Chuck and Faceplate** on **Page 20** for details.

3. Disengage the half-nut lever and the feed lever (**Figure 10**).

4. Connect power to the machine.

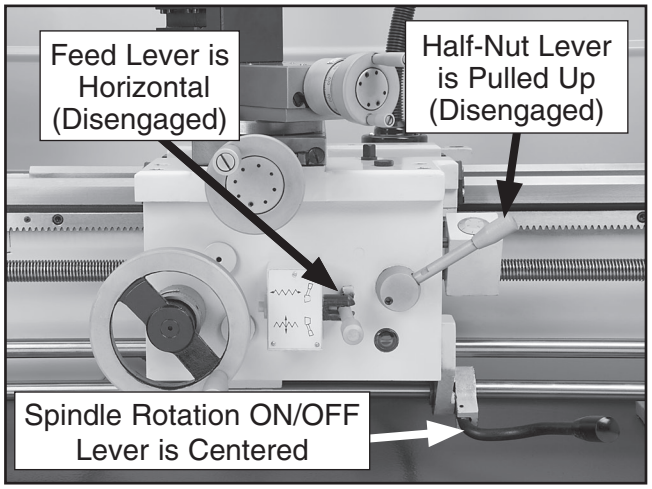


Figure 10. Apron controls.

5. Rotate the red stop/RESET button (**Figure 11**) clockwise so it pops out, and make sure the motor direction selector points to STOP.

6. Move the speed levers to **B** and **1** so the spindle will rotate at 70 RPM (**Figure 11**).

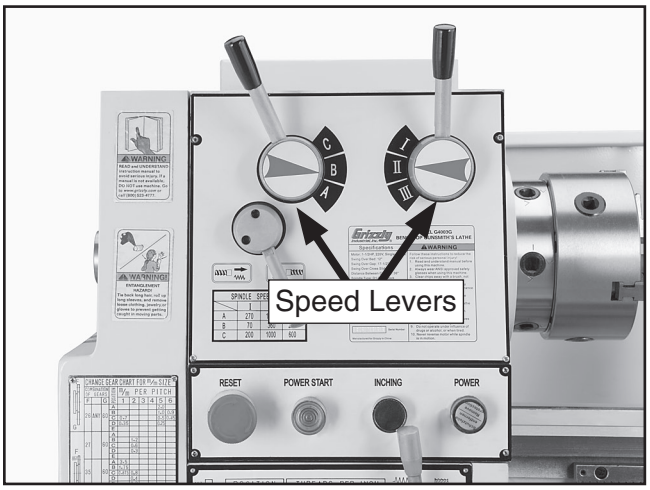


Figure 11. Headstock controls.

7. Push the POWER START button, then move the spindle rotation ON/OFF lever (**Figure 10**) down until the chuck begins to turn. The top of the chuck should turn toward you.

   —If you hear squealing or grinding noises, turn the lathe ***OFF*** immediately and correct any problem before further operation.

   —If the problem is not readily apparent, refer to **Troubleshooting** on **Page 35**.

8. Push the emergency stop button.

   —If the lathe does not stop, turn the lathe ***OFF*** with the spindle rotation ON/OFF lever, and disconnect the lathe from power. Refer to **Troubleshooting** on **Page 35** for correction.

9. Return the spindle rotation ON/OFF lever to STOP, reset the emergency stop button, restart the lathe, and let the lathe run for a minimum of 10 minutes in both directions.

10. Turn the lathe ***OFF***, and move the speed levers to **C** and **1** so the spindle will rotate at 200 RPM. Run the lathe in both directions for 10 minutes.

11. Repeat **Step 9** for the remaining RPM ranges progressively increasing in RPM. When these steps are complete, the lathe is broken in.

12. Drain and refill the lubricant in the headstock with Mobil DTE® Oil or an equivalent. Refer to **Lubrication** on **Page 33** for steps and apron oil change interval.

Tailstock Setup

The tailstock alignment was set at the factory with the headstock. However, we recommend that you take the time to ensure that the tailstock is aligned to your own desired tolerances.

To align the tailstock:

1. Center drill a 6" long piece of bar stock on both ends. Set it aside for use in **Step 4.**

2. Make a dead center by turning a shoulder to make a shank. Flip the piece over in the chuck and turn a 60° point (s**ee Figure 12**). As long as it remains in the chuck, the point of your center will be accurate to the spindle axis.

   Note: *Keep in mind that the point will have to be refinished whenever it is removed and returned to the chuck.*

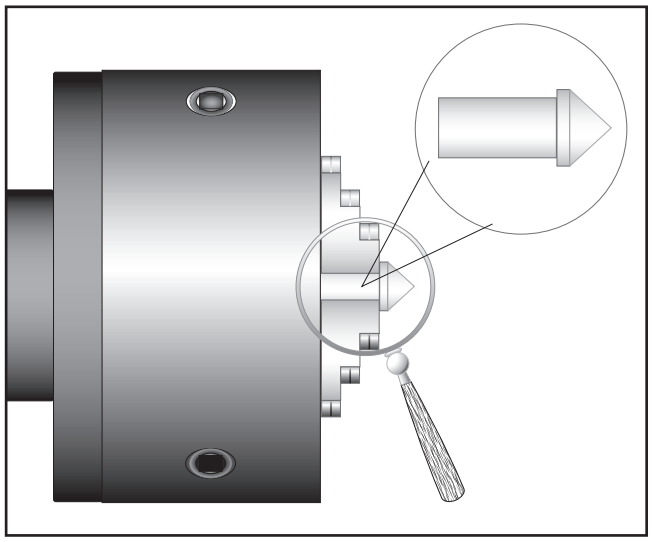


Figure 12. Finished dead center.

3. Place the live center in your tailstock.

4. Attach a lathe dog to the bar stock from **Step 1** and mount it between the centers (as shown in **Figure 13**).

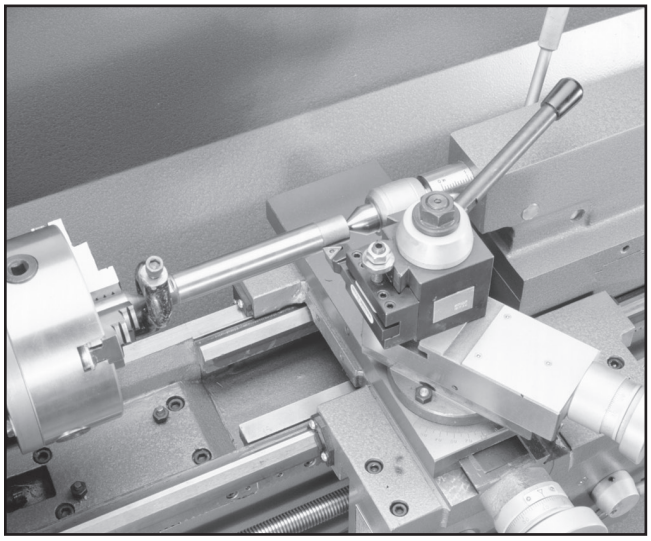


Figure 13. Bar stock mounted on centers.

5. Turn approximately 0.010" off the diameter.

6. Mount a dial indicator so that the plunger is on the tailstock barrel (**Figure 14**).

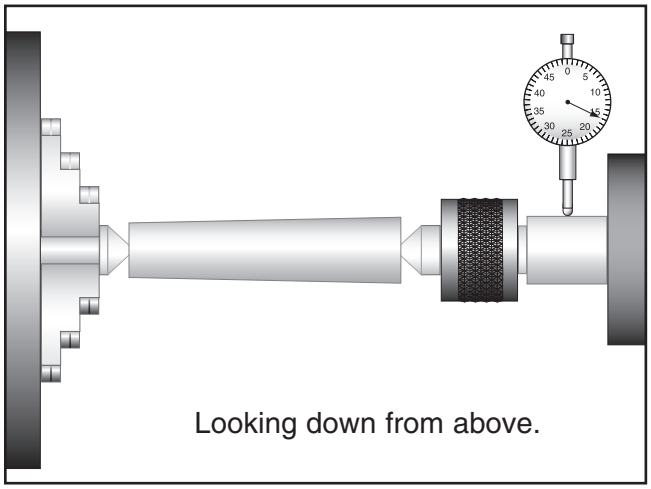


Figure 14. Adjusting for headstock end taper.

7. Measure the stock with a micrometer. If the stock is wider at the tailstock end, the tailstock needs to be moved toward the cutter the amount of the taper (**Figure 14**).

— If the stock is thinner at the tailstock end, the tailstock needs to be moved away from the operator by at least the amount of the taper (**Figure 15**).

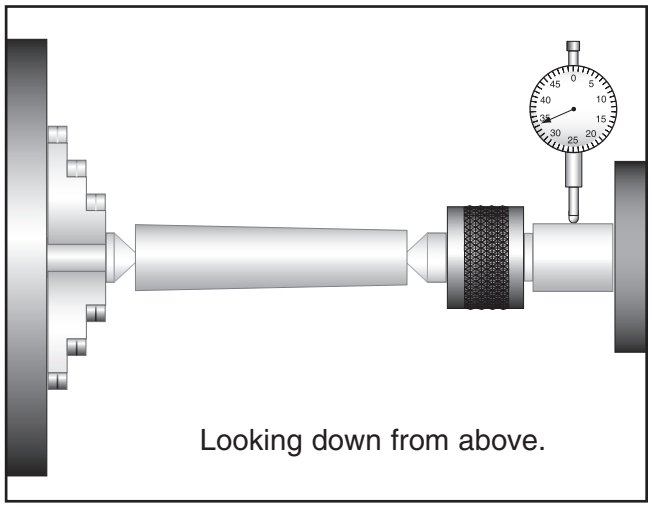


Figure 15. Adjusting for tailstock end taper.

NOTICE

DO NOT forget to lock the tailstock to the ways after each adjustment.

8. Loosen the tailstock lock lever and adjust the tailstock offset by the amount of the taper by turning the adjustment set screw (**Figure 16**). Turn another 0.010" off of the stock and check for taper. Repeat as necessary until the desired amount of accuracy is achieved.

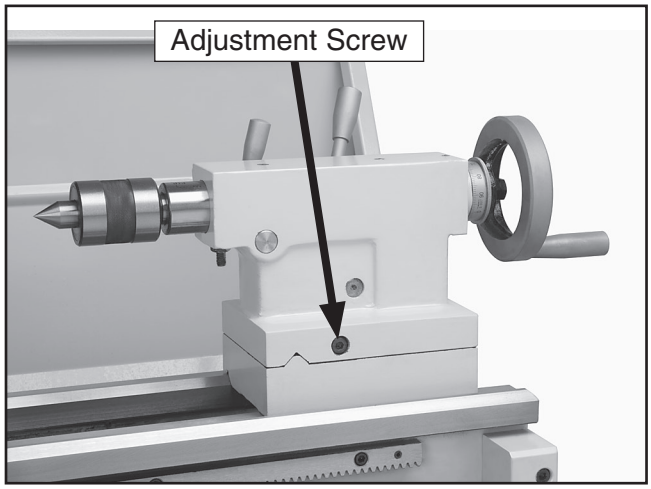


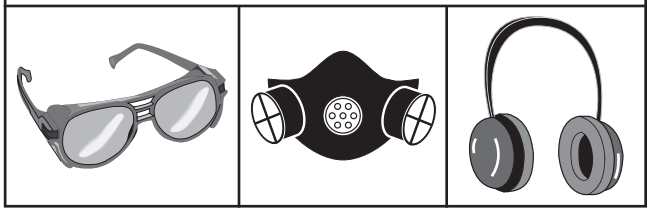
Figure 16. Tailstock adjustment locations.

SECTION 4: OPERATION

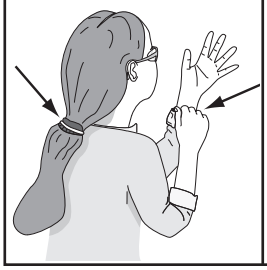
Operation Safety

⚠WARNING

Damage to your eyes, lungs, and ears could result from using this machine without proper protective gear. Always wear safety glasses, a respirator, and hearing protection when operating this machine.



⚠WARNING



Loose hair and clothing could get caught in machinery and cause serious personal injury. Keep loose clothing and long hair away from moving machinery.

NOTICE

If you have never used this type of machine or equipment before, WE STRONGLY RECOMMEND that you read books, trade magazines, or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

NOTICE

Complete the Test Run & Break-In procedure on Page 16 before using this lathe for any cutting or threading operations; otherwise, gear box damage will occur.

Spindle Speeds

NOTICE

NEVER move levers while the lathe is running, and NEVER force any lever when shifting.

The spindle speed or RPM is controlled by the speed control levers (**Figure 17**). Use the chart in **Figure 18**, to find the best spindle speed required for your task.

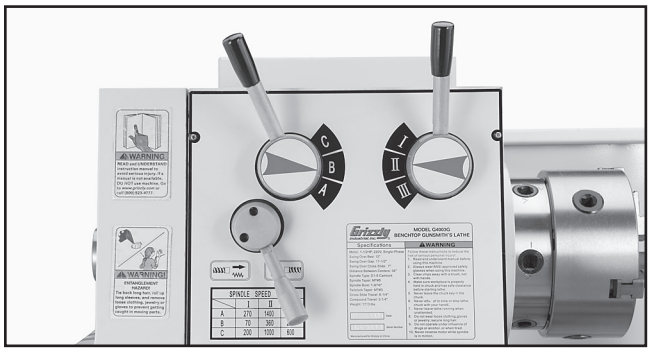


Figure 17. Spindle control levers.

The chart below shows the various combinations of knob positions for achieving a desired speed.

Example:
To select a spindle speed of 600 RPM, move the alpha lever until the indicator arrow points to **C**. Move the numeric lever so it points to **3**.

Spindle Speed

	1	2	3
A	270	1400	800
B	70	360	220
C	200	1000	600

Figure 18. Speed chart.

Mounting Chuck and Faceplate

The Model G4003G is shipped with the 3-jaw chuck installed. This is a scroll-type chuck, meaning that all three jaws move in unison when adjusted.

The 4-jaw chuck, on the other hand, features independent jaws. This chuck is used for square or unevenly-shaped stock.

If either chuck cannot hold your workpiece, the cast-iron faceplate has slots for T-bolts that hold standard or custom clamping hardware. With the correct clamping hardware, this faceplate will hold non-cylindrical parts such as castings.

The chucks and faceplate have a D-1 Camlock mount. Please note that there are lines stamped into the cam and on the chuck body. A chuck key is used to turn the locking cams (**Figure 19**).

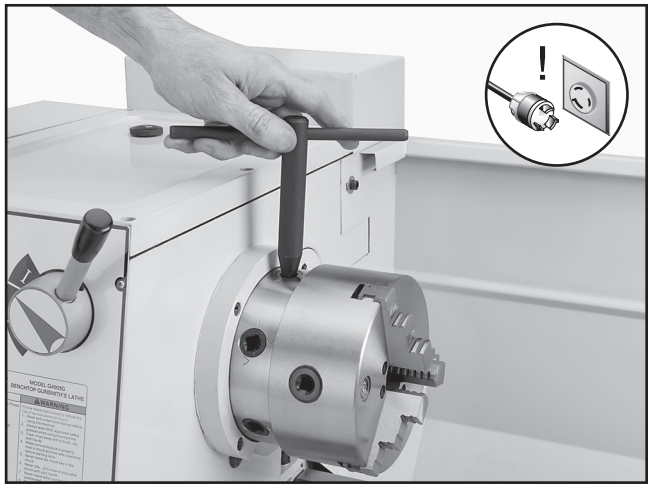


Figure 19. Key positioned to remove chuck.

⚠CAUTION

To protect the ways when removing or installing a chuck, ALWAYS place a piece of plywood over the ways. Use extreme care when removing or installing a chuck so that your hands do not become trapped between the chuck and the plywood.

To remove a chuck:

1. DISCONNECT LATHE FROM POWER!

2. Place a piece of plywood across the lathe ways and position it just under the chuck. The board should be at least 8" wide and 10" long.

⚠CAUTION

The chuck is heavy and can be awkward to handle. Be aware that when removing or installing a chuck, your fingers can be pinched if you allow the chuck to drop.

3. Turn a cam with the chuck key until the cam line aligns with the spindle line mark shown in **Figure 20.**

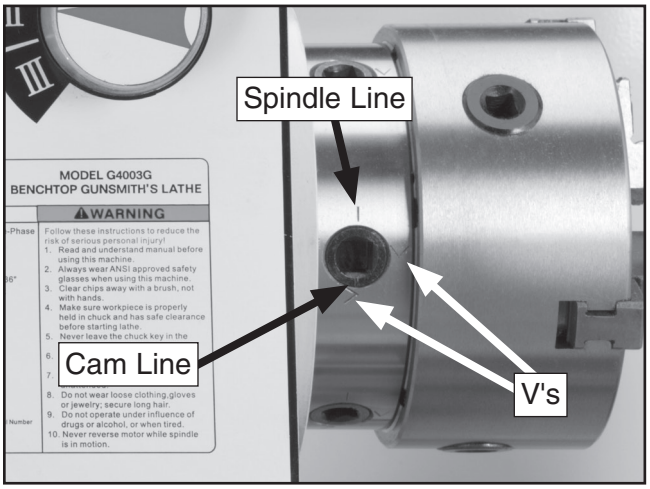
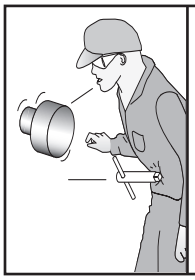


Figure 20. Cam lines aligned to spindle line.



⚠WARNING

Always remove the chuck key after using it! Objects thrown from a lathe can cause serious injury or death to the operator or bystanders.

4. Turn the other cams in the same way. Make sure to support the chuck with one hand as you align the last cam. The chuck may come off at this point, so **it is important you are ready to support its weight.**

5. Remove the chuck key.

—If the chuck is still tight on the spindle, tap the back of the chuck with a rubber or wood mallet while supporting the bottom of the chuck with your free hand.

—If the chuck does not immediately come off, rotate the spindle approximately 60˚ and tap again. Make sure all the marks on the cams and spindle are in proper alignment.

To install a chuck:

1. DISCONNECT LATHE FROM POWER!

2. Place a piece of plywood across the lathe bed and position it just under the spindle.

3. Align the pins in the back of the chuck with the holes on the spindle face and insert the pins.

4. While supporting the weight of the chuck, turn one cam with the chuck key until the cam line is between the two V's on the spindle. Do not tighten at this time.

5. Rotate the spindle and repeat **Step 4** on opposite cam.

6. Rotate the spindle and repeat **Step 4** on the rest of the cams in an alternating manner.

7. When all cams are snug, return to the first cam and tighten the cam completely. Repeat this step with the rest of the cams.

Centers

A tailstock center supports stock that is too long to be supported by the chuck alone. The tailstock barrel and live center have an MT#3 taper. Included with this lathe is an MT#3 to MT#5 spindle sleeve. If you need to install a center in the spindle when using the face plate, you can do so by using this adapter sleeve.

Before installing any center or arbor, make sure that the mating surfaces are perfectly clean. These parts will last longer and remain accurate if properly maintained. If oil is present on the mating surfaces, the tapers will not interlock.

To install the center, insert the end of the center into the tailstock bore until it seats. Once the workpiece is installed, the force of a mounted workpiece will fully seat the taper.

When using a live center, the tailstock barrel should protrude about ½" and not more than 3" (see **Figure 21**).

To remove the live center, back the tailstock barrel all the way into the tailstock casting. The live center will pop out. Be sure to catch it when it comes out to avoid damaging the tip.

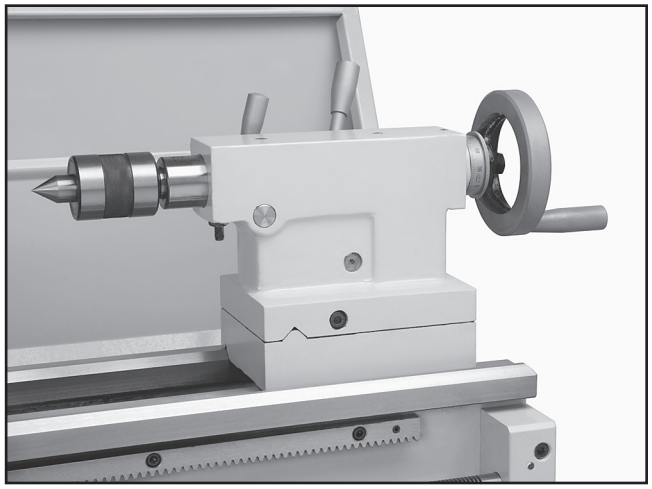


Figure 21. Live center installed in tailstock.

Spider

Your lathe is equipped with a set of outboard spindle supports otherwise known as a "spider" (**Figure 22**). Use the spider when a long workpiece has the potential for wobble or vibration when it extends through the outboard side of the headstock.

The tips of the spider screws have brass wear pads that hold the workpiece without causing indents in the finish.

When installed, make sure to always use the jam nuts to lock each spider screw in position. Merely tightening the spider screws against the workpiece and leaving the jam nuts loose is not safe. The spiders screws may loosen up during lathe operation and crash into the lathe end cover.

⚠CAUTION

Remove the spider screws when not in use. Always disconnect the lathe from power when installing, removing, or adjusting the spider screws. Ignoring this warning can lead to personal injury or machine damage.

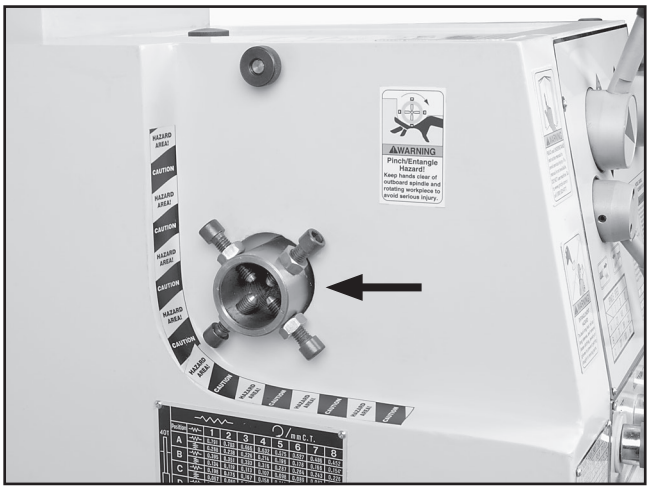


Figure 22. Spider.

Steady Rest

The steady rest supports long, small diameter stock that otherwise could not be turned because of deflection.

We replaced the common brass wear pads at the ends of the fingers with bearings. Having bearings here maintains consistent non-wearing support throughout the cut. The steady rest can also replace the tailstock to allow for cutting tool access at the end of your workpiece.

To use the steady rest:

1. Secure the steady rest to the bedway from below with the locking plate, then snug the mounting bolt (**Figure 23**).

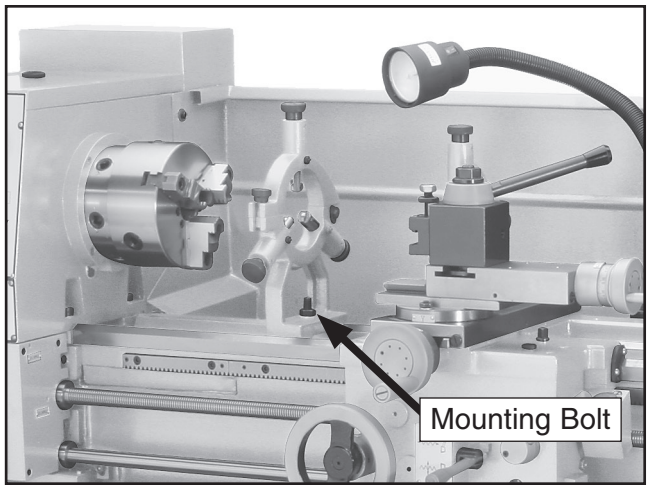


Figure 23. Steady rest in place.

2. Adjust the fingers until the bearings make contact and support the workpiece. Do not over adjust the fingers or they will cause deflection in the workpiece.

3. Oil the finger bearings and the rolling surfaces while in use to assist in friction-free support.

Follow Rest

The follow rest is normally used with small diameter stock to prevent the workpiece from "springing" under pressure from the turning tool.

We replaced the common brass wear pads at the ends of the fingers with bearings. Having bearings here maintains consistent non-wearing support throughout the cut. The steady rest can also replace the tailstock to allow for cutting tool access at the end of your workpiece.

To use the follow rest:

1. Secure the follow rest to the saddle with the two cap screws (**Figure 24**).

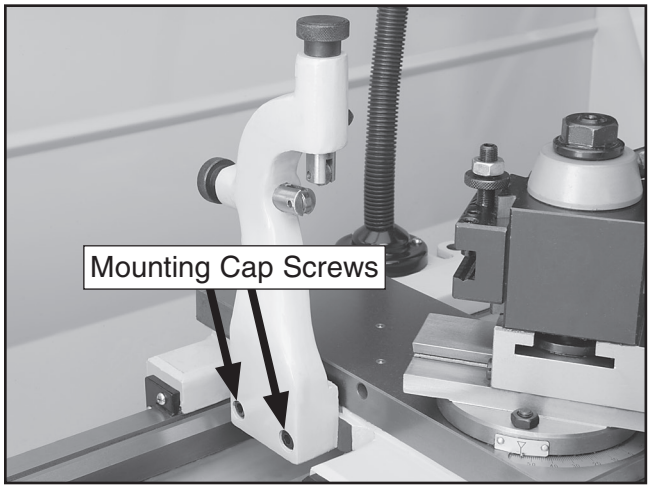


Figure 24. Follow rest secured to saddle.

2. Adjust the fingers until the bearings make contact and support the workpiece. Do not over adjust the fingers as to cause deflection in the workpiece.

3. Lubricate the finger bearings and the rolling surfaces while in use to assist in low friction support.

Feed Direction Lever

NOTICE

NEVER move levers while the lathe is running, and NEVER force any lever when shifting. If the lever will not engage, rotate the chuck by hand while keeping light pressure on the lever. As the chuck rotates it aligns the gears and the lever will engage.

Your lathe can cut left or right while feeding or threading, and it can cut across both ways for facing operations. This feed direction is controlled by the feed direction lever shown in **Figure 25**.

When the selection knob is positioned as depicted in **Figure 25**, the carriage will move to the right along the bed or the cross feed will travel away from the operator. The cross feed and longitudinal feed selection is controlled on the apron.

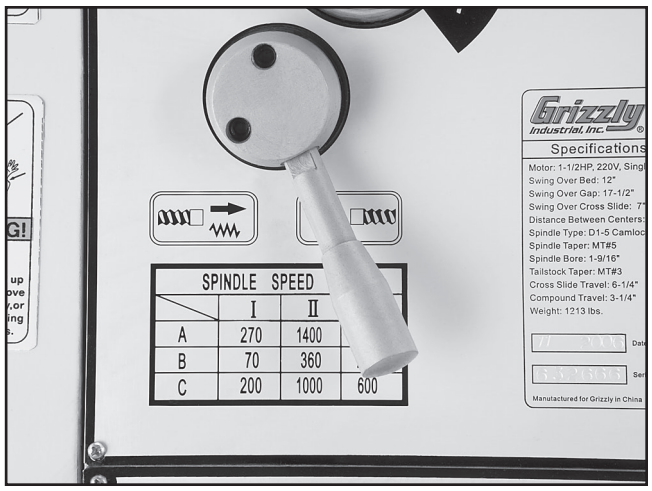


Figure 25. Feed direction lever.

To reverse the direction of the feeding or threading operation, stop the lathe, move the feed direction lever to the right.

When the lever is positioned in the middle, *no* direction is selected and all of the drive mechanisms after this point are in neutral.

Feed Rod Lever

NOTICE

NEVER move levers while the lathe is running, and NEVER force any lever when shifting. If the lever will not engage, rotate the chuck by hand while keeping light pressure on the lever. As the chuck rotates it aligns the gears and the lever will engage.

The feed rod can be selected by moving the lever to the left as in **Figure 26.** Use this position for all feed operations.

When the lever is positioned straight up, no drive mechanism is selected and the gear train downstream is in neutral.

When the lever is moved to the right, the lead screw is selected for threading operations.

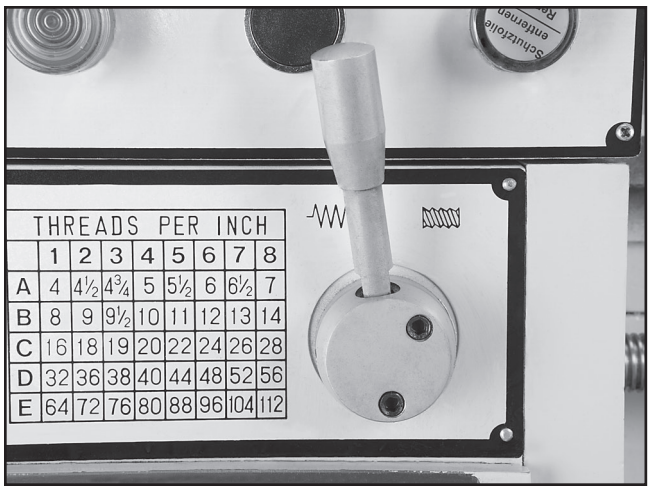


Figure 26. Feed rod lever.

Gearbox Levers

NOTICE

NEVER move levers while the lathe is running, and NEVER force any lever when shifting. If the lever will not engage, rotate the chuck by hand while keeping light pressure on the lever. As the chuck rotates it aligns the gears and the lever will engage.

The two levers (**Figure 27**) at the bottom of the headstock change the feed rate, or the number of threads cut per-inch. The left-hand lever engages in alpha positions **A**, **B**, **C**, **D**, and **E**; and the right-hand lever engages in numeric positions **1, 2, 3, 4, 5, 6, 7,** and **8**.

Use the feed rate chart shown in **Figure 28** to position the quick change gearbox levers.

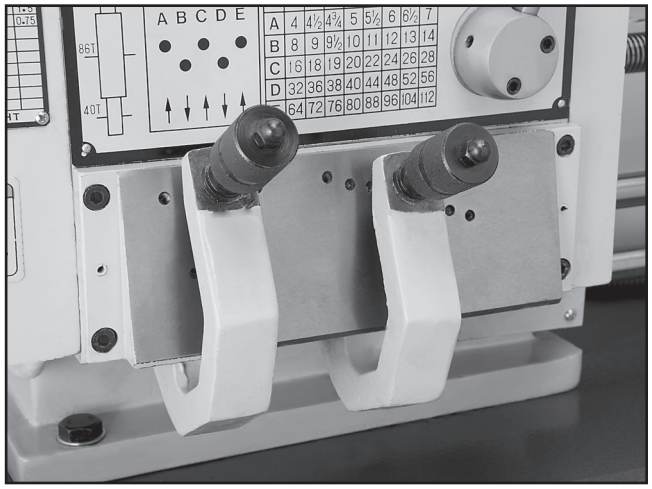


Figure 27. Quick change gearbox.

To change the position of the feed selector, pull the knurled handle. This disengages a pin which is inserted into a selection hole. Position the lever in the down position and slide to the right or left until it is positioned below the desired selection hole. Raise the lever with one hand while pulling the handle with the other. The pin at the end of the lever should align with the selection hole. If it does not, rotate the feed rod or chuck *by hand* while maintaining gentle pressure on the lever.

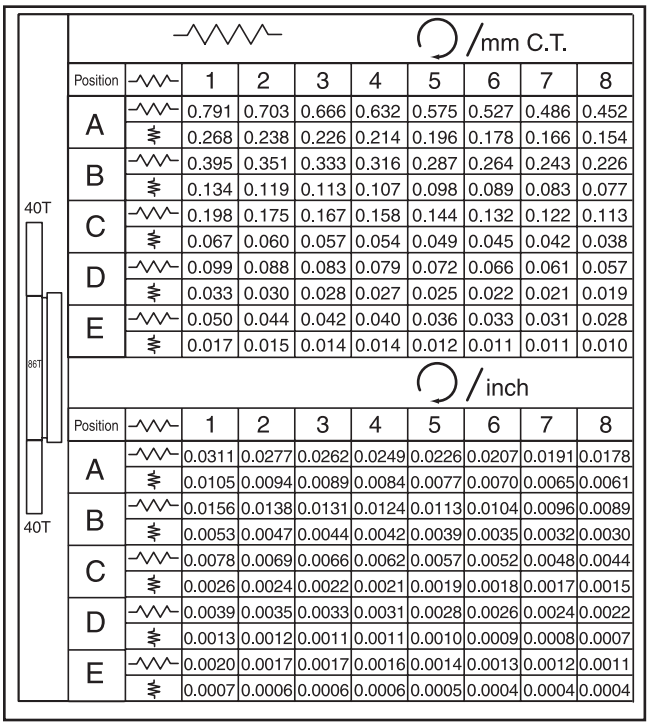
Feed Rate Chart

The far left column in the feed rate chart (**Figure 28**) shows which change gears must be installed so the chart will be accurate.

To make a longitudinal cut in inches, use the bottom portion of the chart. If the desired feed rate is 0.0062"/revolution, look at the longitudinal ranges.

According to the chart we would put the left-hand lever in the **C** position and the right-hand lever in the **4** position. Metric calculations would be done the same way but you would use the upper half of the chart. To perform a cross feed cut with a feed rate of 0.0013" move the left-hand lever to the **D** position and the right-hand lever to the **1** position.

Please note that when either of the two selector levers are left in the down position, the drive train downstream from this point is in neutral.



/mm C.T.

Position		1	2	3	4	5	6	7	8
A	~	0.791	0.703	0.666	0.632	0.575	0.527	0.486	0.452
	≷	0.268	0.238	0.226	0.214	0.196	0.178	0.166	0.154
B	~	0.395	0.351	0.333	0.316	0.287	0.264	0.243	0.226
	≷	0.134	0.119	0.113	0.107	0.098	0.089	0.083	0.077
C	~	0.198	0.175	0.167	0.158	0.144	0.132	0.122	0.113
	≷	0.067	0.060	0.057	0.054	0.049	0.045	0.042	0.038
D	~	0.099	0.088	0.083	0.079	0.072	0.066	0.061	0.057
	≷	0.033	0.030	0.028	0.027	0.025	0.022	0.021	0.019
E	~	0.050	0.044	0.042	0.040	0.036	0.033	0.031	0.028
	≷	0.017	0.015	0.014	0.014	0.012	0.011	0.011	0.010

/inch

Position		1	2	3	4	5	6	7	8
A	~	0.0311	0.0277	0.0262	0.0249	0.0226	0.0207	0.0191	0.0178
	≷	0.0105	0.0094	0.0089	0.0084	0.0077	0.0070	0.0065	0.0061
B	~	0.0156	0.0138	0.0131	0.0124	0.0113	0.0104	0.0096	0.0089
	≷	0.0053	0.0047	0.0044	0.0042	0.0039	0.0035	0.0032	0.0030
C	~	0.0078	0.0069	0.0066	0.0062	0.0057	0.0052	0.0048	0.0044
	≷	0.0026	0.0024	0.0022	0.0021	0.0019	0.0018	0.0017	0.0015
D	~	0.0039	0.0035	0.0033	0.0031	0.0028	0.0026	0.0024	0.0022
	≷	0.0013	0.0012	0.0011	0.0011	0.0010	0.0009	0.0008	0.0007
E	~	0.0020	0.0017	0.0017	0.0016	0.0014	0.0013	0.0012	0.0011
	≷	0.0007	0.0006	0.0006	0.0006	0.0005	0.0004	0.0004	0.0004

Figure 28. Feed rate chart.

~ This symbol indicates longitudinal feed.
≷ This symbol indicates cross feed rates.

Carriage/Cross Feed Lever

Longitudinal and cross slide powered motions are controlled by the carriage/cross feed lever. The lever pivots through two stops that require moving the lever left and right as well as up and down. Moving this lever upward activates the automatic longitudinal feed. Moving the lever down activates the cross slide (**Figure 29**).

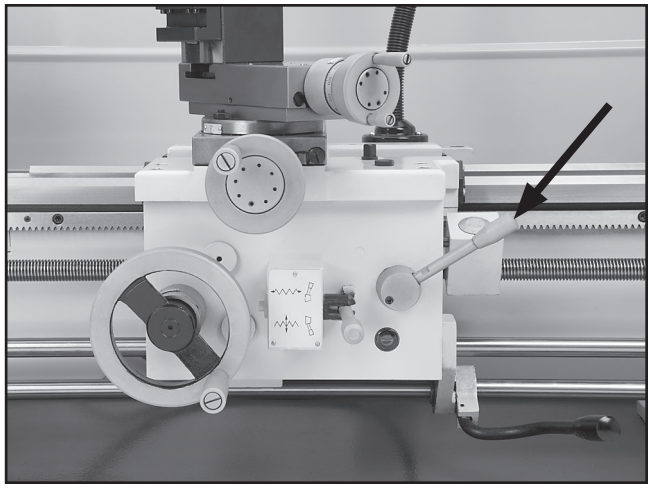


Figure 29. Carriage/cross feed lever in neutral position.

Half-Nut Lever and Inch Threading

The half-nut lever clamps and releases the half-nut, which clamps around the leadscrew (**Figure 30**). The lever is only engaged while cutting threads.

Note: *If the apron feed lever is engaged, the half-nut lever is blocked from use; and when the half-nut lever is engaged the apron lever is blocked from use. If both levers were engaged at the same time apron damage would occur.*

After the carriage has been returned, the thread dial tells you when to re-engage the half-nut and resume threading (**Figure 30**).

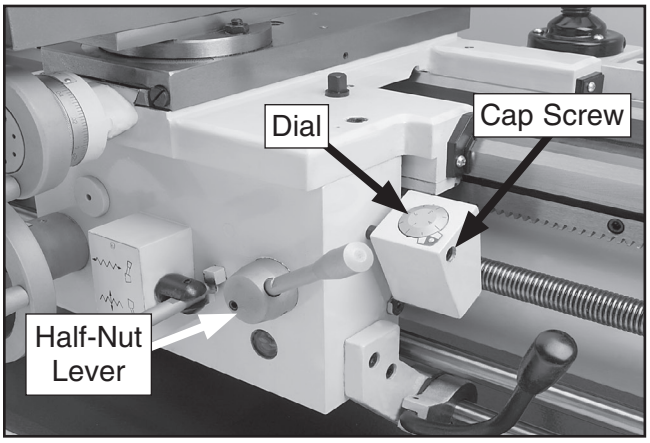


Figure 30. Threading dial and half-nut lever.

When the cap screw is loosened, the thread dial housing pivots so its gear can be engaged or disengaged from the lead screw. When engaged, the dial will turn when the lead screw and spindle are turning.

When the half-nut lever is engaged, the dial stops turning. By carefully engaging the half-nut as the appropriate line or number passes by the indicator mark, a thread can be re-entered for its next pass of the cutter without wiping out the previous cut.

The thread dial chart listed in **Figure 31** shows when to use the thread dial when cutting inch threads. If a thread is divisible by 8, then you need not use the thread dial. If cutting metric threads, you cannot use the thread dial.

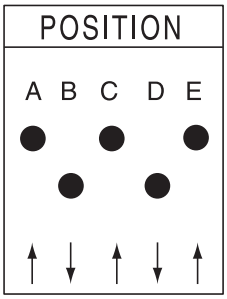
4	N	8	ANY	16	ANY	32	ANY	64	ANY
4½	1	9	1-3	18	N	36	ALL	72	ANY
4¾	1	9½	1	19	1	38	N	76	ALL
5	1	10	N	20	ALL	40	ANY	80	ANY
5½	1	11	1-3	22	N	44	ALL	88	ANY
6	1-3	12	ALL	24	ANY	48	ANY	96	ANY
6½	1	13	1-3	26	N	52	ALL	104	ANY
7	1	14	N	28	ALL	56	ANY	112	ANY

ANY = Engage at any time
ALL = Engage on all lines
N = Engage on any Number
1-3 = Engage on 1 or 3
1 = Engage only on 1

Figure 31. Thread dial chart.

While other thread pitches may be achieved, the G4003G is designed so that no gear changes are needed for cutting inch threads.

However, you will have to move the feed direction lever to the direction of thread you want to cut, and then move the feed rod lever to the right. To get the needed threads in inches, you will then use the standard thread chart (**Figure 32**) to determine which positions to move the quick change levers to.



	THREAD PER INCH							
	1	2	3	4	5	6	7	8
A	4	4½	4¾	5	5½	6	6½	7
B	8	9	9½	10	11	12	13	14
C	16	18	19	20	22	24	26	28
D	32	36	38	40	44	48	52	56
E	64	72	76	80	88	96	104	112

Figure 32. Standard thread chart.

Example:
The desired threads are 11 threads per inch, move the quick change gearbox levers to positions **B** and **5**. As the thread dial chart shows, engage the half-nut when the thread dial reads **1** or **3** and begin your first cut. When the cut is complete, disengage the half-nut and return the carriage manually to the beginning of the cut. Watch the dial. When the **1** or the **3** on the dial comes around to the indicator mark, engage the half-nut. Begin your second pass. Repeat this process until the desired depth of cut is achieved.

Change Gears and Metric Threading

This lathe can cut 29 different metric threads, but gear changes are required to cut all of the listed metric threads. These gear changes take place on the left hand end of the machine (**Figure 33**).

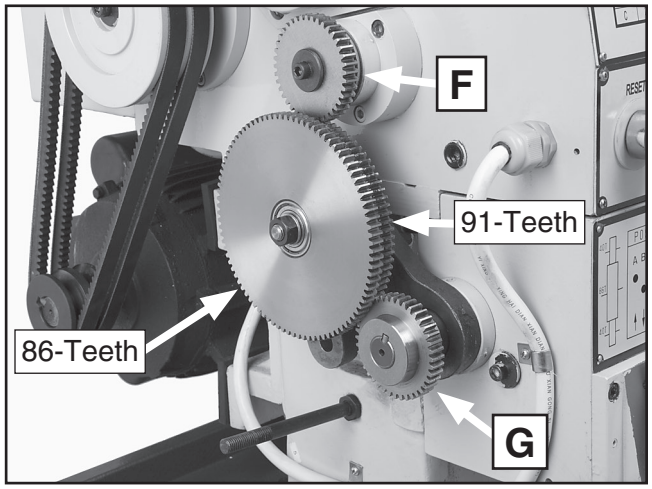
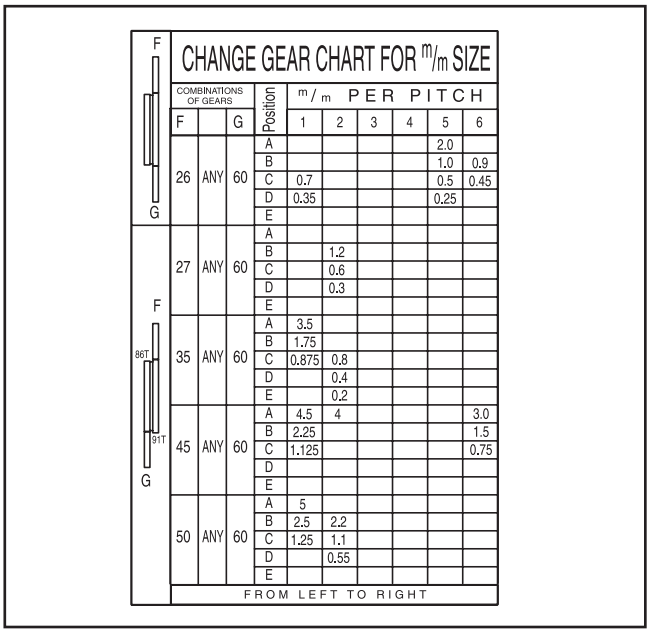


Figure 33. Change gear locations.

The chart is divided into 3 main columns. Starting from the left: Gear diagram, Combination of Gears and m/m Per Pitch.

To use the chart:

1. Find the desired pitch in the chart (**Figure 34**).



CHANGE GEAR CHART FOR m/m SIZE

COMBINATIONS OF GEARS F		G	Position	m/m PER PITCH 1	2	3	4	5	6
26	ANY	60	A					2.0	
			B					1.0	0.9
			C	0.7				0.5	0.45
			D	0.35				0.25	
			E						
27	ANY	60	A						
			B		1.2				
			C		0.6				
			D		0.3				
			E						
35	ANY	60	A	3.5					
			B	1.75					
			C	0.875	0.8				
			D		0.4				
			E		0.2				
45	ANY	60	A	4.5	4				3.0
			B	2.25					1.5
			C	1.125					0.75
			D						
			E						
50	ANY	60	A	5					
			B	2.5	2.2				
			C	1.25	1.1				
			D		0.55				
			E						

FROM LEFT TO RIGHT

Figure 34. Metric thread chart.

2. Below the m/m Per Pitch label are numbers. Find the corresponding number above the desired pitch and change the right hand quick change lever to that position.

3. To the left of the desired pitch is a small column with a letter. This letter indicates placement of the left hand quick change lever. Move the lever to the corresponding location.

4. In the “Combination of Gears” column are 3 small columns. Please note the **F** and **G** at the top. The numbers below **F** and **G** represent the number of gear teeth on a change gear. Find the required change gears that have the corresponding number of teeth as stated in the chart to the left of the desired pitch.

Continued on next page ⟶

5. Loosen the 17mm arm-support hex nut and rotate the bracket so the middle gear moves away from gear **F** (**Figure 35**).

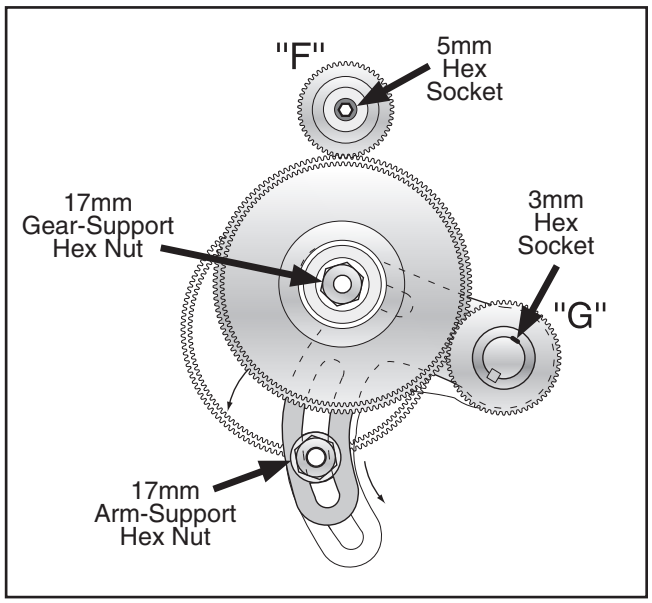


Figure 35. Change gear placement.

6. Loosen 17mm gear-support hex nut and slide the middle gear away from gear **G**.

7. Use a 5mm hex wrench and remove the cap screw and remove change gear **F**.

8. Use a 5mm hex wrench and loosen the set screw in the hub of gear **G** and pull the gear off of the shaft.

9. Replace change gears **F** and **G** with the gears which will produce your desired metric thread pitch and tighten the fasteners to hold the gears on the shafts.

10. Slide the appropriate middle gear against gear **G** until they mesh with 0.002" to 0.004" backlash and tighten the cap screw.

11. Rotate the appropriate middle gear against gear **F** until they mesh with 0.002" to 0.004" backlash and tighten the cap screw.

Example:
The desired metric pitch is 1.25mm, move the quick change levers to positions **1** and **C**. The "Combination of Gears" column shows that the **F** position change gear needs 50 teeth and the **G** position change gear needs 60 teeth. A diagram on the left side of the chart shows that the 50 tooth change gear meshes with the 91 tooth middle gear and the 60 tooth change gear meshes with the 86 tooth middle gear. Begin threading, but remember you cannot use the thread dial for the metric threads. You must keep the half-nut lever engaged throughout the whole threading process until the threads are complete.

Carriage Handwheels

Carriage Handwheel

The carriage handwheel (**Figure 36**) moves the carriage left or right along the bed. This manual control is necessary when setting up the machine for turning or when manual movement is desired during turning operations.

Compound Slide Handwheel

The compound slide handwheel (**Figure 36**) controls the position of the cutting tool relative to the workpiece. This slide is adjustable to any angle. The graduated dial is adjustable using the same method as the dial on the cross slide. Angle adjustment is locked by hex nuts on the base of the top slide.

Cross Slide Handwheel

The cross slide handwheel moves the cross slide toward and away from the work. Turning the dial clockwise moves the slide toward the workpiece. The graduated dial can be adjusted by holding the handwheel with one hand and turning the dial with the other.

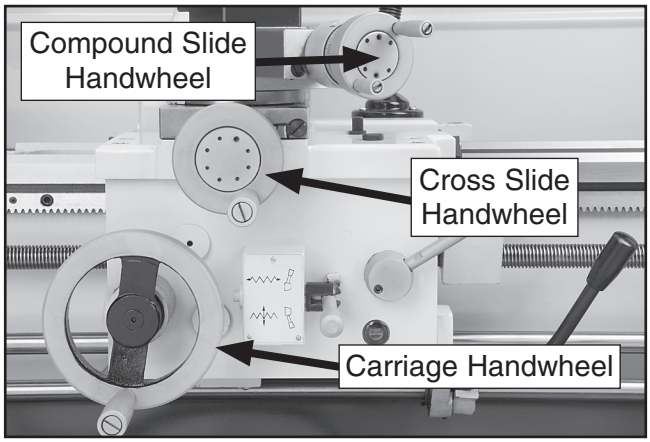


Figure 36. Handwheel locations.

Tool Post & Holder

Figure 37 shows tool post and a holder with optional bit. Cutting tools can be secured and removed by tightening or loosening the clamping screws in the top of the holder. A threaded stud is mounted in the top of the holder and has a knurled thumb wheel. Rotating the thumb wheel allows for adjustment of the tool holder so the cutting tool can be centered. The handle on the tool post can be rotated to lock and unlock the tool holder onto the dovetail ways. The tool post may be rotated by loosening the nut at the top of the tool post.

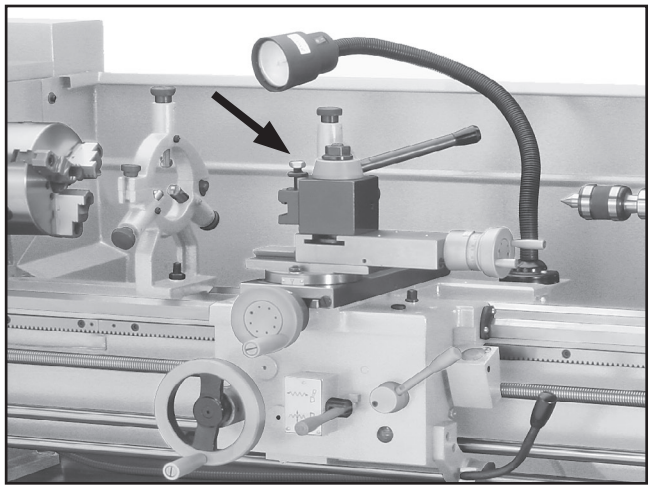


Figure 37. Quick change tool post.

Tailstock Controls

The tailstock (**Figure 38**) serves many functions. The primary use is for holding centers and drill chucks. The barrel has a Morse taper #3 bore and is imprinted with graduations in millimeters and inches.

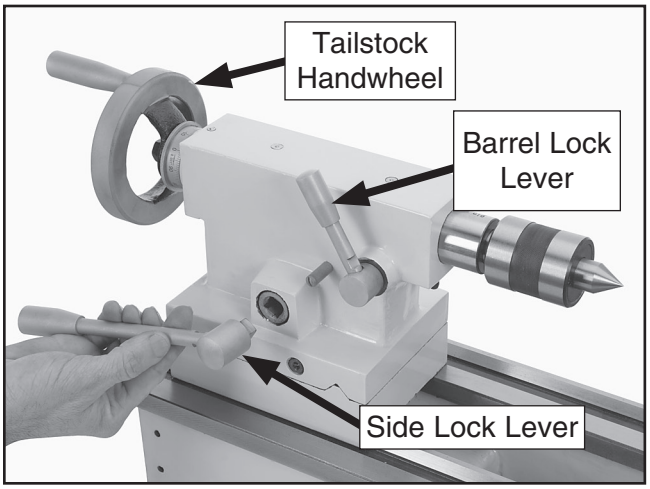


Figure 38. Tailstock controls.

Tailstock Handwheel

Turning the handwheel advances or retracts the barrel in the tailstock. The graduated dial on the handwheel is adjustable.

Barrel Lock Lever

This lever locks the tailstock barrel in place.

Side Lock Lever & Torque Tightening

This removable lever locks the tailstock in place on the lathe bed. The socket that it fits into will accept a ½" drive torque wrench.

For repeating super accurate vertical alignment positioning time after time, tighten the tailstock here with an inch-pound torque wrench. If you must, you can use a foot-pound torque wrench but DO NOT exceed 40 lbs/ft of torque or you may damage the ways and the tailstock. When tightening the tailstock down to the maximum torque of 40 lbs/ft, the center point will be drawn down approximately 0.006".

SECTION 5: ACCESSORIES

H6879—Lathe Operation & Maintenance Book
This detailed metal lathe book provides extensive coverage of a wide variety of metalworking operations. Special emphasis is placed on lathe components, accessories, and operating procedures, including basic machine setup and routine maintenance. A "must have" reference for all metal lathe owners. 260 pages.

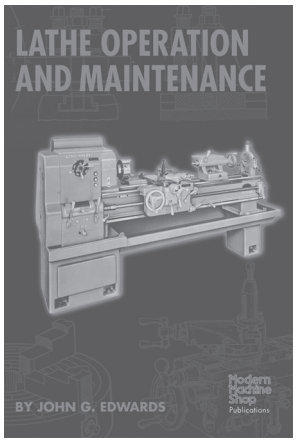


Figure 39. H6879 Lathe Operation & Maintenance Book.

Quick Change Tool Holders

All models below are Series 200
G5701—Boring Bar Holder ¾"
G5704—Parting Tool Holder ⅝"
G5705—Knurling Tool Holder ¼"~⅝"
G5703—Morse Taper Holder MT#3
G5700—Turning/Boring Holder ¼"~⅝"; ½"ø
G5699—Turning Holders ¼"~⅝"

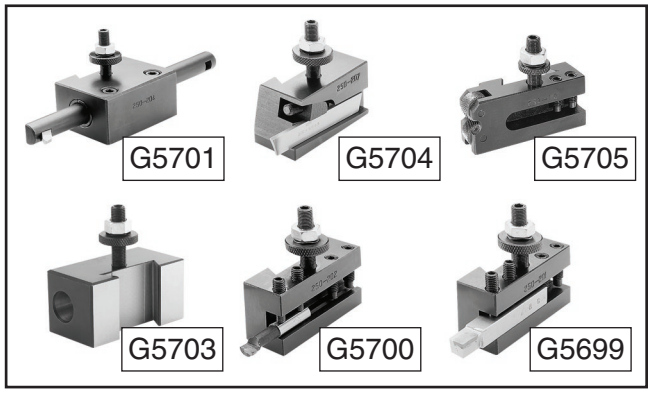


Figure 40. Series 200 quick change tool holders.

H6095—Digital Readout (DRO)
This is one of the finest DRO's on the market today. Features selectable resolution down to 5µm, absolute/incremental coordinate display, arc function, radius/diameter function, master reference datum, 199 user defined tools, double sealed scales, inches/millimeters and linear error compensation. Don't be fooled by our low prices—this is only a reflection of the absence of any “middlemen” in the marketing structure—not a reflection of the quality.

Figure 41. H6095 Digital Readout.

H5786—MT#3 x 4" Bull Nose Rolling Center
H5902—MT#3 x 2" Bull Nose Rolling Center
Built with precision sealed bearings, designed for heavy-duty use on hollow workpieces.

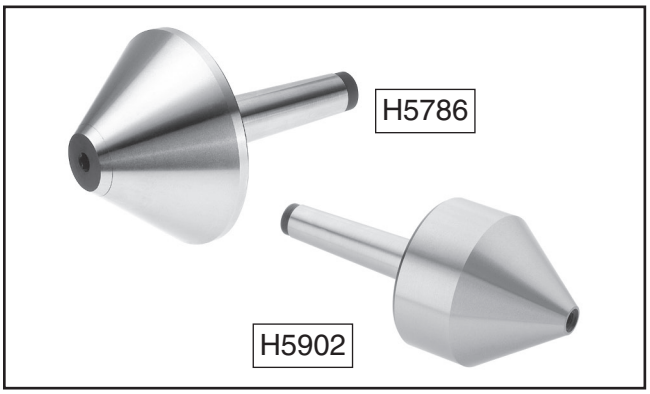


Figure 42. MT#3 bull nose rolling centers.

Call 1-800-523-4777 To Order

H5786—MT#3 Long Nose Precision Center
Provides critical tool clearance. Adjustable thrust bearings, 60° tip and 30° clearance relief angle.

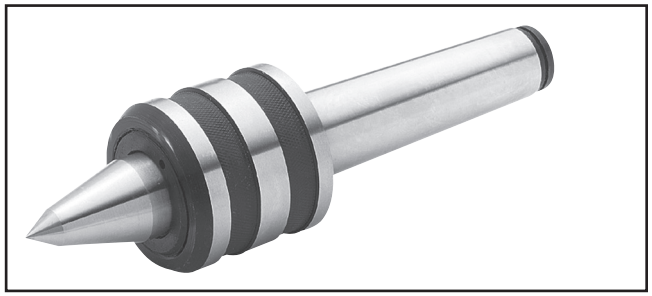


Figure 43. MT#3 Long Nose Center

G7033—Internal Threading Tool Holder
G7042—Carbide Inserts for Steel (5 pk)
G7050—Carbide Inserts for Cast Iron (5 pk)

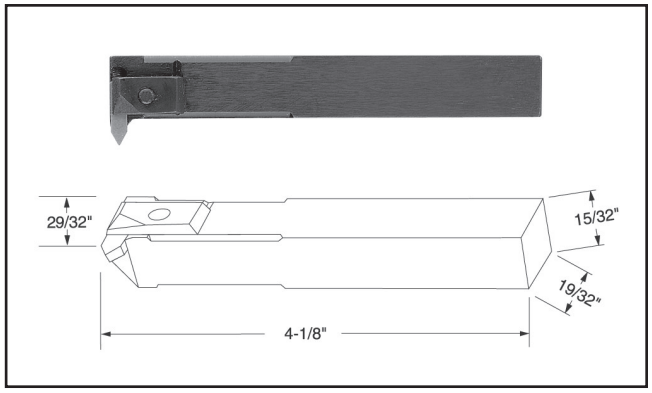


Figure 44. G7033 Int. Threading Tool Holder.

Call 1-800-523-4777 To Order

G7038Z—Boring Bar
G7040—Carbide Inserts for Steel (5 pk)
G7048—Carbide Inserts for Cast Iron (5 pk)

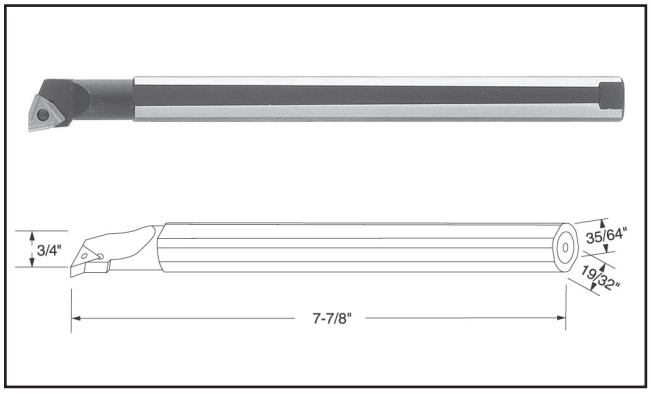


Figure 45. G7038Z Boring Bar.

G7030—Threading Tool Holder
G7041—Carbide Inserts for Steel (5 pk)
G7049—Carbide Inserts for Cast Iron (5 pk)

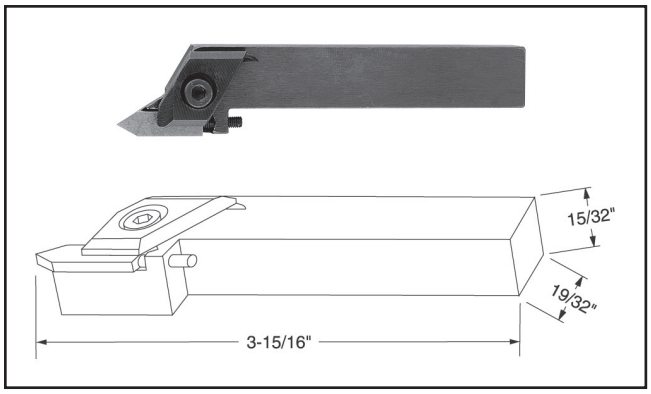


Figure 46. G7030 Threading Tool Holder.

SECTION 6: MAINTENANCE

Basic Maintenance

Check for the following conditions and repair or replace when necessary:

- Loose mounting bolts and chuck.
- Worn switch or safety features.
- Worn or damaged cords or plug.
- Any other condition that could hamper the safe operation of this machine.

Lubrication

Take the time to wipe down and oil your lathe after use. Do not leave metal chips and cutting fluid on the ways. We recommend using ISO 68 or a general motor oil unless otherwise specified.

Saddle, see Figure 47
Apply lubrication to the saddle through the two ball fittings on the top face of the saddle and one near the saddle handwheel. Make sure the oil level is ¾ full as seen in the through the sight glass. Change the oil for the first time after one month of operation, and then at six month intervals. Use the same oil as in the headstock.

Cross-Slide and Compound, see Figure 47
These slides are also supplied with ball fittings in their top surfaces and should be oiled the same as the saddle.

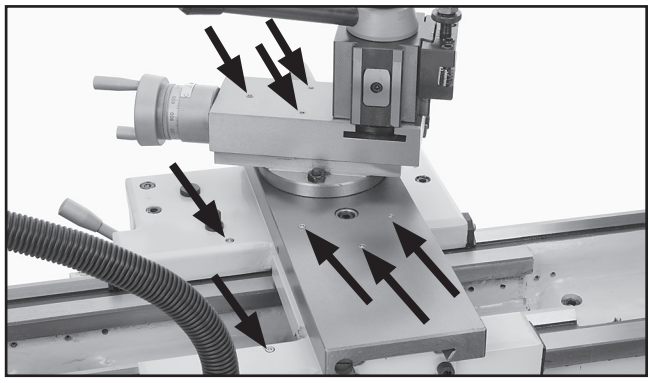


Figure 47. Saddle, compound, and cross-slide lubrication.

External Gearing, see Figure 48
Apply a minimal amount of lithium grease to the teeth of the change gears. Avoid getting grease on the belt or pulleys when lubricating. Apply three drops of oil into the port daily.

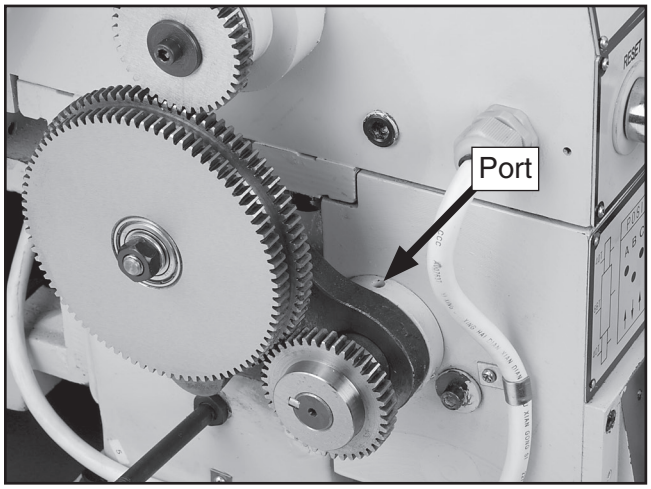


Figure 48. Headstock lubrication.

Quick Change Gearbox, see Figure 49
Lubrication for the Gearbox is provided through two oil points, labeled "Oil Nipple." Add a squirt or two of oil after every three-to-four hours of use.

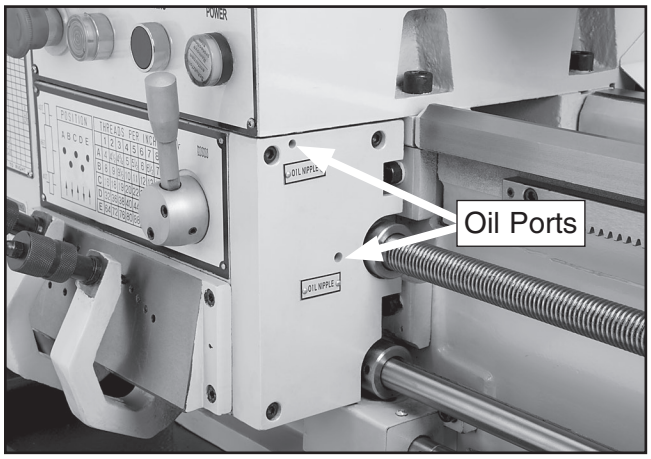


Figure 49. Quick change gearbox lubrication.

Slides and Ways
Apply oil to the ways and slides after each use. Wipe the ways with a clean rag prior to lubrication to ensure that no grime is carried along with your lubricant into friction-sensitive areas. Applying oil to the bedways and other bare metal parts also protect the lathe from rust and pitting.

Lead Screw and Feed Rod, see Figure 50
Be sure to clean and lubricate the leadscrew, feed rod and switch control rod. The lead screw and feed rod have a bearing on the tail stock end support that will require one to two squirts of oil.

Headstock Gearbox
The oil in the headstock should be changed after the first 2 hours of use. Then, every 6 months, depending on usage. It is recommended that a light weight, non detergent oil be used. Viscosity can range from 10W to 30W and may include multi-viscosity oil in this same range.

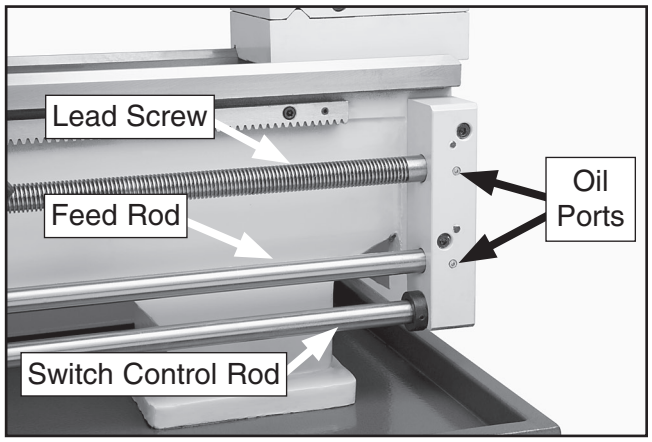


Figure 50. Lead screw, feed rod and switch rod lubrication.

Tailstock , see Figure 51
The tailstock is fitted with one oiling port. The tailstock barrel may be oiled directly. Apply oil each week, or after every five uses (depending on the frequency of operation). Be sure to clean the slide ways for the tailstock and lift the tailstock and squirt a few drops of oil on the ways. It is a good idea to remove the tailstock once a month and wipe the bottom thoroughly and replace.

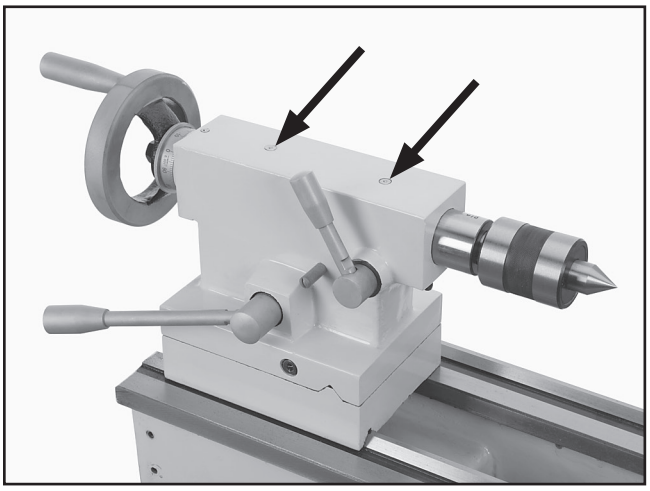


Figure 51. Tailstock lubrication.

SECTION 7: SERVICE

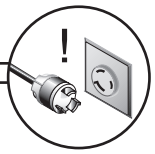
Troubleshooting

Review the troubleshooting and procedures in this section to fix your machine if a problem develops. If you need replacement parts or you are unsure of your repair skills, then feel free to call our Technical Support at (570) 546-9663.

Motor & Gearbox

Symptom	Possible Cause	Possible Solution
Motor will not start.	1. Main power panel switch is ***OFF***. 2. Emergency switch is pushed in. 3. Circuit breaker or fuse has tripped. 4. No voltage or open connection. 5. Capacitor is at fault. 6. Motor direction switch is at fault. 7. Power switch or magnetic contactor is at fault. 8. Motor is at fault.	1. Turn the main power panel switch ***ON***. 2. Rotate emergency switch so it pops out. 3. Seek an electrician to troubleshoot and repair the shop power supply. 4. Test circuit, replace wires and connections as required. 5. Replace capacitor. 6. Replace switch. 7. Replace power switch or magnetic contactor. 8. Replace motor.
Fuses or circuit breakers trip open.	1. Short circuit in line cord or plug. 2. Short circuit in motor or loose connections. 3. Incorrect fuses or circuit breakers in power supply.	1. Inspect cord or plug for damaged insulation and shorted wires. 2. Inspect all connections on motor for loose or shorted terminals or worn insulation. 3. Install correct fuses or circuit breakers.
Machine is loud belt slips when cutting. Overheats or bogs down in the cut.	1. Excessive depth of cut. 2. RPM or feed rate wrong for operation. 3. Dull cutters. 4. Belt is slipping. 5. Belt is at fault.	1. Decrease depth of cut. 2. Refer to RPM feed rate chart for appropriate rates. 3. Sharpen or replace cutters. 4. Remove grease or oil on belt or pulleys/tighten belt tensioner against low range belt. 5. Replace belt.
Gear change levers will not shift into position.	1. Gears not aligned in headstock.	1. Rotate spindle by hand until gear falls into place.
Loud, repetitious noise coming from machine at or near the motor.	1. Pulley set screws or keys are missing or loose. 2. Motor fan is hitting the cover.	1. Inspect keys and set screws. Replace or tighten if necessary. 2. Tighten fan or shim cover, or replace items.
Motor is loud when cutting. Overheats or bogs down in the cut.	1. Excessive depth of cut or feed rate. 2. RPM or feed rate wrong for cutting operation. 3. Cutting tool is dull. 4. Gear setup is too tight, causing them to bind.	1. Decrease depth of cut or feed rate. 2. Refer to RPM feed rate chart for appropriate rates. 3. Sharpen or replace the cutting tool. 4. Readjust the gear setup with a small amount of backlash so the gears move freely and smoothly when the chuck is rotated by hand.
Gear change levers will not shift into position.	1. Gears not aligned in headstock.	1. Rotate spindle by hand until gear falls into place.

Troubleshooting



Operation and Work Results

Symptom	Possible Cause	Possible Solution
Entire machine vibrates excessively upon startup and while running.	1. Workpiece is unbalanced. 2. Worn or broken gear present. 3. Chuck or faceplate has become unbalanced. 4. Spindle bearings at fault.	1. Reinstall workpiece so it is as centered with the spindle bore as possible. 2. Inspect gears and replace if necessary. 3. Rebalance chuck or faceplate; contact a local machine shop for help. 4. Tighten or replace spindle bearings.
Cutting tool or machine components vibrate excessively during cutting.	1. Tool holder not tight enough. 2. Cutting tool sticks too far out of tool holder; lack of support. 3. Gibs are out of adjustment. 4. Dull cutting tool. 5. Incorrect spindle speed or feed rate.	1. Check for debris, clean, and retighten. 2. Reinstall cutting tool so no more than ⅓ of the total length is sticking out of tool holder. 3. Tighten gib screws at affected component. 4. Replace or re sharpen cutting tool. 5. Use the recommended spindle speed.
Can't remove tapered tool from tailstock quill.	1. Quill had not retracted all the way back into the tailstock. 2. Debris was not removed from taper before inserting into quill.	1. Turn the quill handwheel until it forces taper out of quill. 2. Always make sure that taper surfaces are clean.
Cross slide, compound rest, or carriage feed has sloppy operation.	1. Gibs are out of adjustment. 2. Handwheel is loose. 3. Lead screw mechanism worn or out of adjustment.	1. Tighten gib screw(s). 2. Tighten handwheel fasteners. 3. Tighten any loose fasteners on lead screw mechanism.
Cross slide, compound rest, or carriage feed handwheel is hard to move.	1. Gibs are loaded up with shavings or grime. 2. Gib screws are too tight. 3. Backlash setting too tight (cross slide only). 4. Bedways are dry.	1. Remove gibs, clean ways/dovetails, lubricate, and readjust gibs. 2. Loosen gib screw(s) slightly, and lubricate bedways. 3. Slightly loosen backlash setting by loosening the locking screw and adjusting the spanner ring at the end of the handle. 4. Lubricate bedways and handles.
Bad surface finish.	1. Wrong RPM or feed rate. 2. Dull tooling or poor tool selection. 3. Too much play in gibs. 4. Tool too high.	1. Adjust for appropriate RPM and feed rate. 2. Sharpen tooling or select a better tool for the intended operation. 3. Tighten gibs. 4. Lower the tool position.
Inaccurate turning results from one end of the workpiece to the other.	1. Headstock and tailstock are not properly aligned with each other.	1. Realign the tailstock to the headstock spindle bore center line.
Chuck jaws won't move or don't move easily.	1. Chips lodged in the jaws.	1. Remove jaws, clean and lubricate chuck threads, and replace jaws.
Carriage won't feed, or hard to move.	1. Gears are not all engaged or broken. 2. Gibs are too tight. 3. Loose screw on the feed handle. 4. Lead screw shear pin has sheared.	1. Adjust gear positions or replace. 2. Loosen gib screw(s) slightly. 3. Tighten. 4. Correct for cause of shear pin breakage, and replace shear pin.
Tailstock quill will not feed out of tailstock.	1. Quill lock lever is tightened down.	1. Turn lever counterclockwise.

Gibs

There are three main gib adjustments for the Model G4003G. They are: the cross-slide gib, the compound slide gib and the saddle gib.

Cross-slide Gib, see Figure 52
The gib on the cross-slide is adjusted by the two screws located at each end. To adjust, loosen the set screw located along the edge of the cross-slide. This set screw is provided for locking the slide for certain operations. After making the adjustments detailed below, tighten the set screw until it just touches the gib.

The gib is wedge shaped and by loosening the screw closest to the operator and then tightening the opposite screw, the slide will become looser. Conversely, loosening the screw farthest away from the operator and tightening the closer screw will tighten the gib. *Do not over tighten.*

Adjust the gib so that it creates a slight drag when the slide is in motion. Test the ease of motion with the gib slightly loose. Begin tightening the gib and test after making small adjustments. When a slight drag is detected the gib is properly adjusted.

NOTICE

When adjusting gibs, keep in mind that the goal of gib adjustment is to remove unnecessary sloppiness from the slide movement without causing them to bind. Loose gibs may cause poor finishes on the workpiece. Over tightening may cause premature wear.

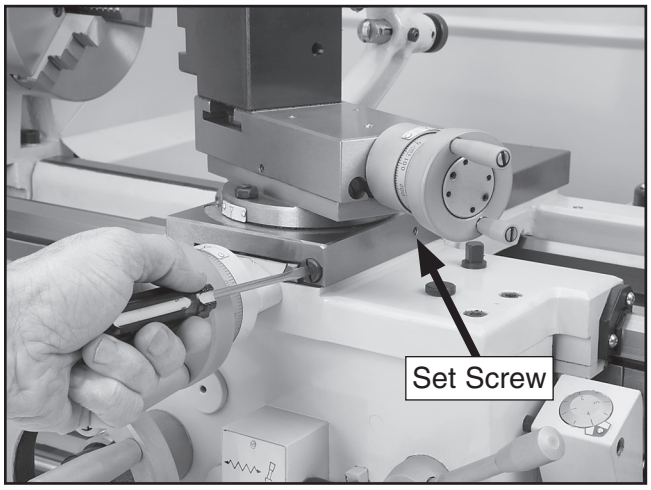


Figure 52. Adjusting the cross-slide gib.

Compound Gib, see Figure 53
The gib on the compound is adjusted by the same method as the gibs on the cross-slide, *except* the screw closest to the operator (when the compound slide is aligned with the cross slide) must be loosened and the screw furthest from the operator tightened to make the gib tighter.

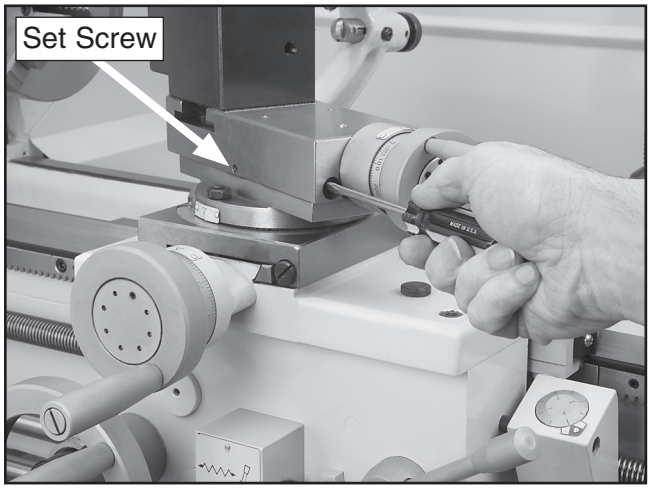


Figure 53. Adjusting the compound rest gib.

Saddle Gib and Saddle Lock, see Figure 54

The saddle is supplied with a square head bolt on the front right hand side of the slide. This bolt is used to lock the saddle in place for increased rigidity when making face cuts. Before making adjustments to the saddle gib, make sure that this bolt is loose by turning it counter clockwise.

It is important that the gib be properly adjusted. A loose gib will cause finish problems in a workpiece. A gib adjusted too tightly will cause premature wear.

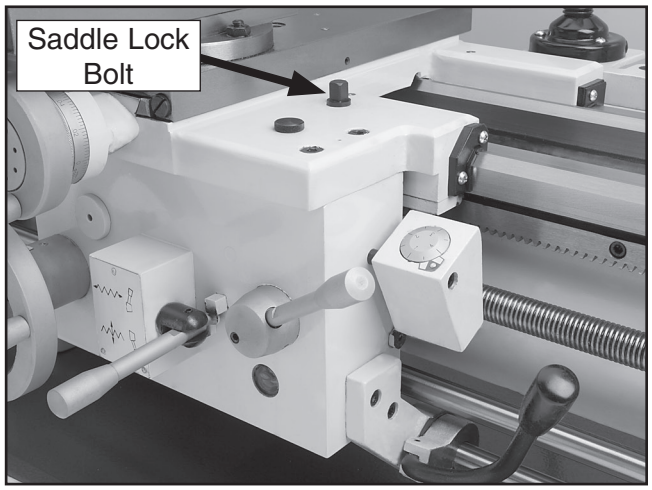


Figure 54. Saddle lock bolt and saddle gib screws.

The gib for the saddle is located on the bottom of the back edge of the slide (**Figure 54**). The tension on this gib is maintained by four set screws with jam nuts. By loosening the jam nuts and tightening the set screws, the gib will tighten. Loosening the set screws will loosen the gib. The gib strip is properly adjusted when a slight drag is detected while moving the apron. Do not over tighten.

It is important the four set screws are tightened evenly. When tightening the jam nuts, hold the set screw in position with a hex wrench.

Bearing Preload

This lathe is shipped from the factory with the spindle bearing preload adjusted. If the spindle ever develops a bit of end-play and the workpiece finish suffers, you can adjust the bearing preload to remove the end-play and improve the workpiece finish.

Adjusting the bearing preload requires using a spanner wrench or a punch and hammer. You can either purchase the spanner wrench at a tool store or fabricate one, using the diagram shown below in **Figure 55**.

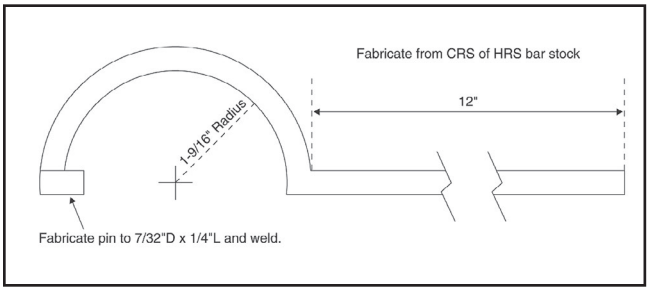


Figure 55. Spanner wrench diagram.

To adjust the preload:

1. Run the lathe for 20 minutes on high speed to bring the lathe to a normal temperature.

2. DISCONNECT THE LATHE FROM THE POWER SOURCE!

3. Remove the chuck, shift the spindle to neutral, then remove the outboard spindle cover (**Figure 56**).

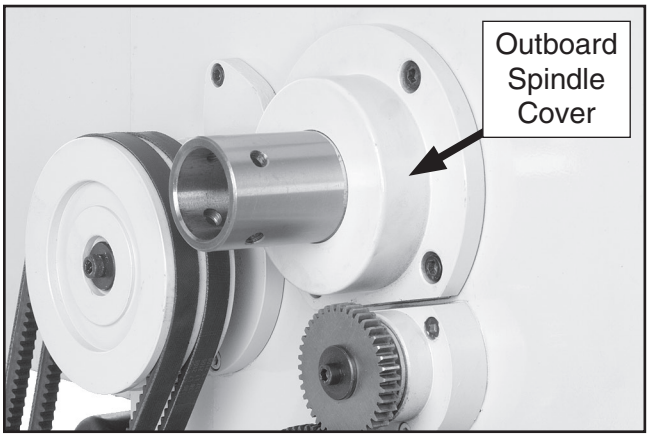


Figure 56. Outboard spindle cover.

4. Place the chuck key in the cam-lock socket and keep the spindle from rotating.

5. Using a spanner wrench, or hammer-and-punch, loosen the outer spanner lock nut (**Figure 57**) counterclockwise and remove it.

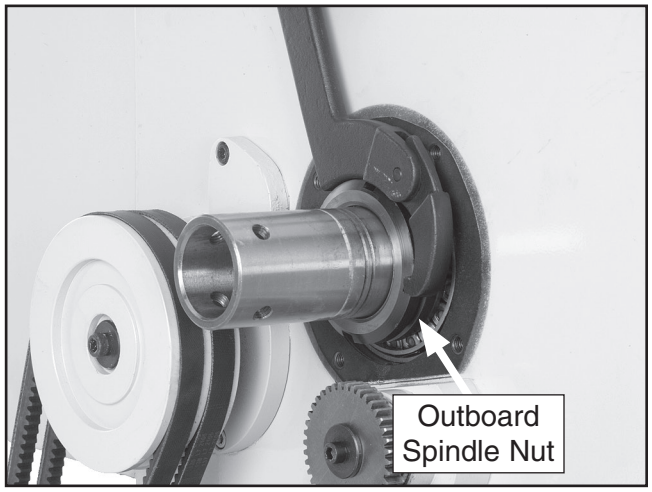


Figure 57. Loosening outboard spindle nut.

6. Loosen the inner spanner nut one turn.

   Note: *You may have to tap on the outboard spindle tube as explained in **Step 7** to help unload the spindle and break the spanner nut loose.*

7. Place a wooden block over the outboard end of the spindle, hit it soundly with a small sledge or heavy dead blow hammer (**Figure 58**). Your goal is to slide the spindle forward just enough to introduce spindle end-play that you can feel by hand.

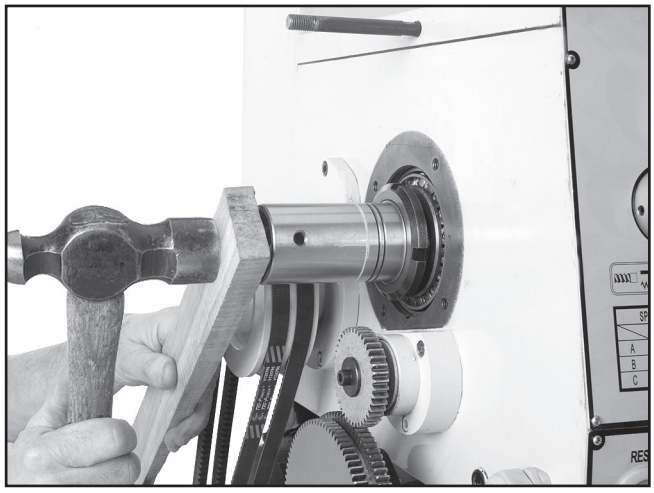


Figure 58. Introducing detectable end-play.

8. Place a dial indicator on the cross slide and move the carriage toward the headstock until the contact point of the indicator touches the spindle face (**Figure 59**).

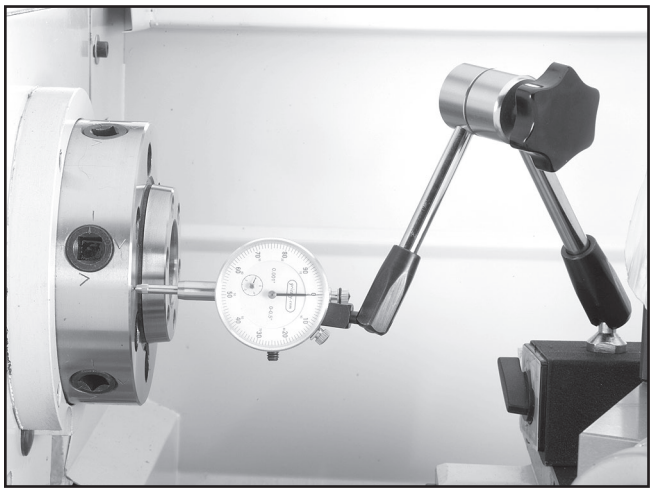


Figure 59. Dial indicator setup.

9. Move the carriage an additional 0.100" toward the headstock.

10. Insert the chuck key into a cam socket and prevent the spindle from turning. Tighten the inner spanner nut until you see the motion of the needle in the dial indicator just barely stop moving (**Figure 60**). During the spanner nut tightening process, rock the spindle back and forth slightly with the chuck key to make sure the spindle tapered roller bearings seat properly in the tapered bearing races.

    When the dial indicator needle stops moving, there will be no spindle end-play and no bearing preload. It is essential that you find this point without tightening the spanner nut too much and inadvertently preloading the spindle bearings.

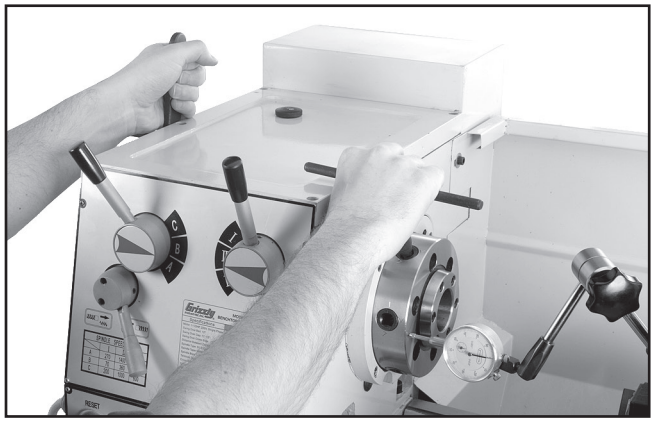


Figure 60. Adjusting spindle bearings.

Since it can take great effort to turn the inner spanner nut, you may find it difficult to know if you have gone past the zero end-play point or not. You may find it easiest to have someone watch the dial for you while you tighten the inner spanner nut. If you think you may have gone past the zero end-play point, take the time to unload the bearings as described earlier, then re-tighten the inner spanner nut until you know you have reached the correct setting.

When you are confident that you have adjusted the inner spanner nut until zero spindle end-play and preload exists, you now must move the spanner inward and additional 0.001" to set the preload.

11. To set the preload, tighten the spanner nut an additional 0.16" along its circumference. See **Figure 61** for the example of this measurement.

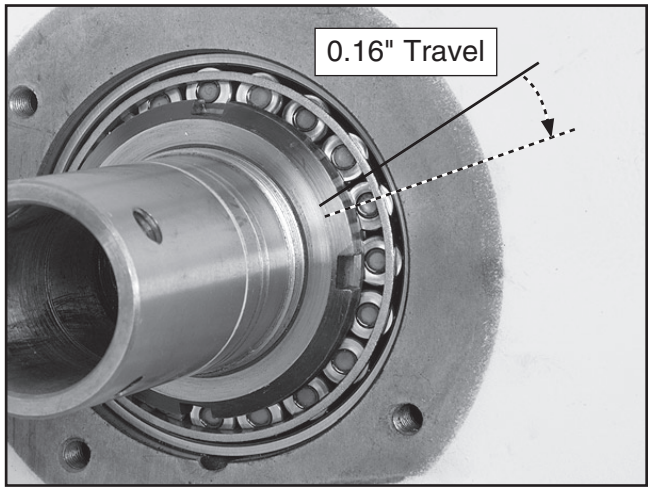


Figure 61. Final spanner nut rotation.

12. Without causing the inner spanner nut to tighten any further, install and tighten the outer spanner nut against the inner nut. Do not overtighten the outer spanner nut because additional preload can force the bearings even tighter against the races in the headstock and cause the headstock to compress, crack, or cause bearing failure.

13. Position the gasket correctly, and re-install the outboard spindle cover.

To confirm that the bearings are correctly preloaded:

1. Make sure all safety precautions have been taken and setup steps are complete to make the lathe fully operational.

2. Install the chuck and tighten the jaws.

3. Set the spindle speed to its highest setting.

4. Connect the lathe to power and turn the lathe spindle ***ON***.

5. Let the lathe run for 20 minutes.

6. Turn the spindle ***OFF***, disconnect lathe from power, and check the temperature of the spindle.

—If the spindle nose is slightly warm to the touch, you have correct bearing preload.

—If the spindle nose is hotter than you can comfortably keep your hand on, the preload is too tight and you must repeat bearing preload adjustment procedure..

Wiring—Electrical Box

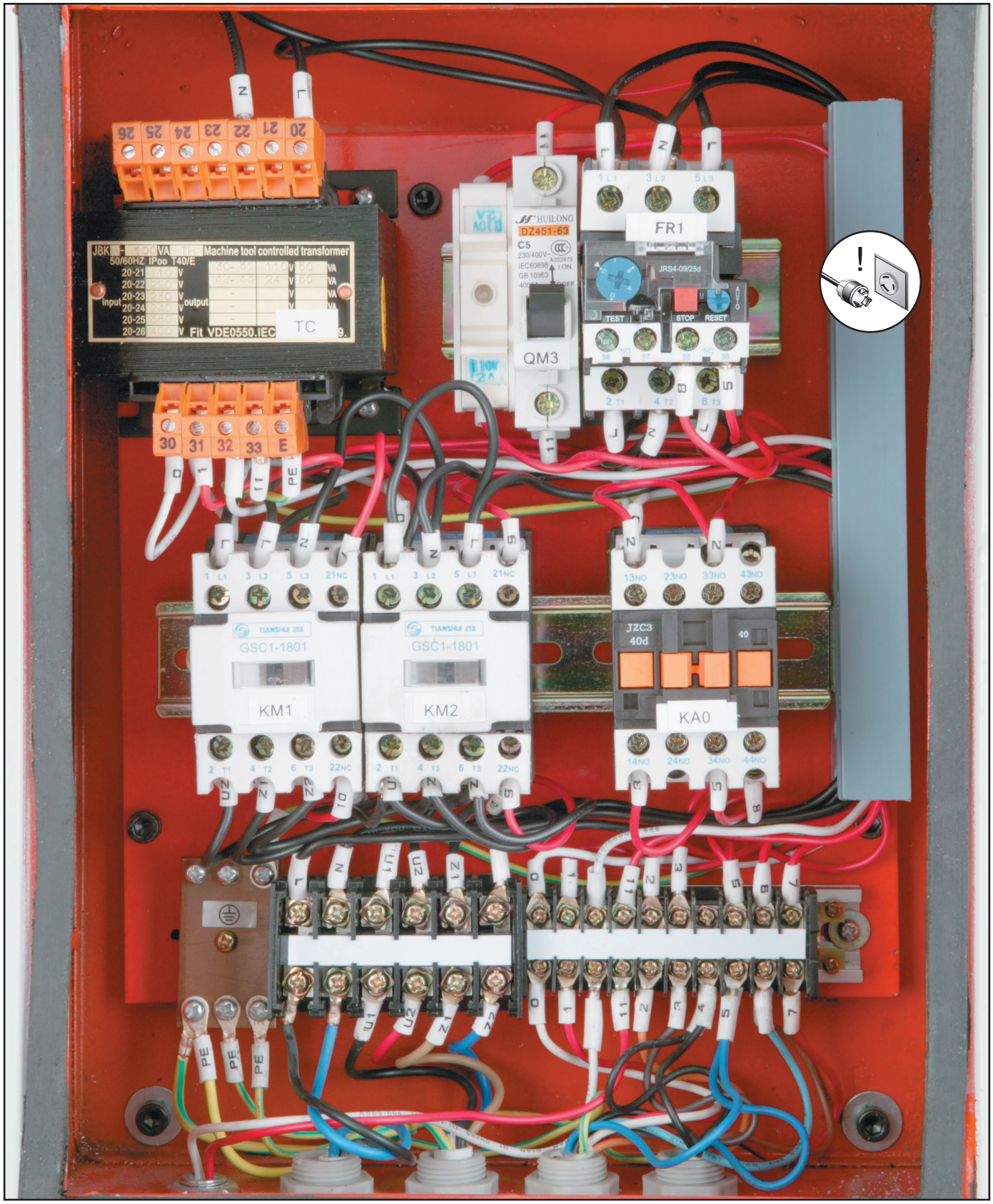
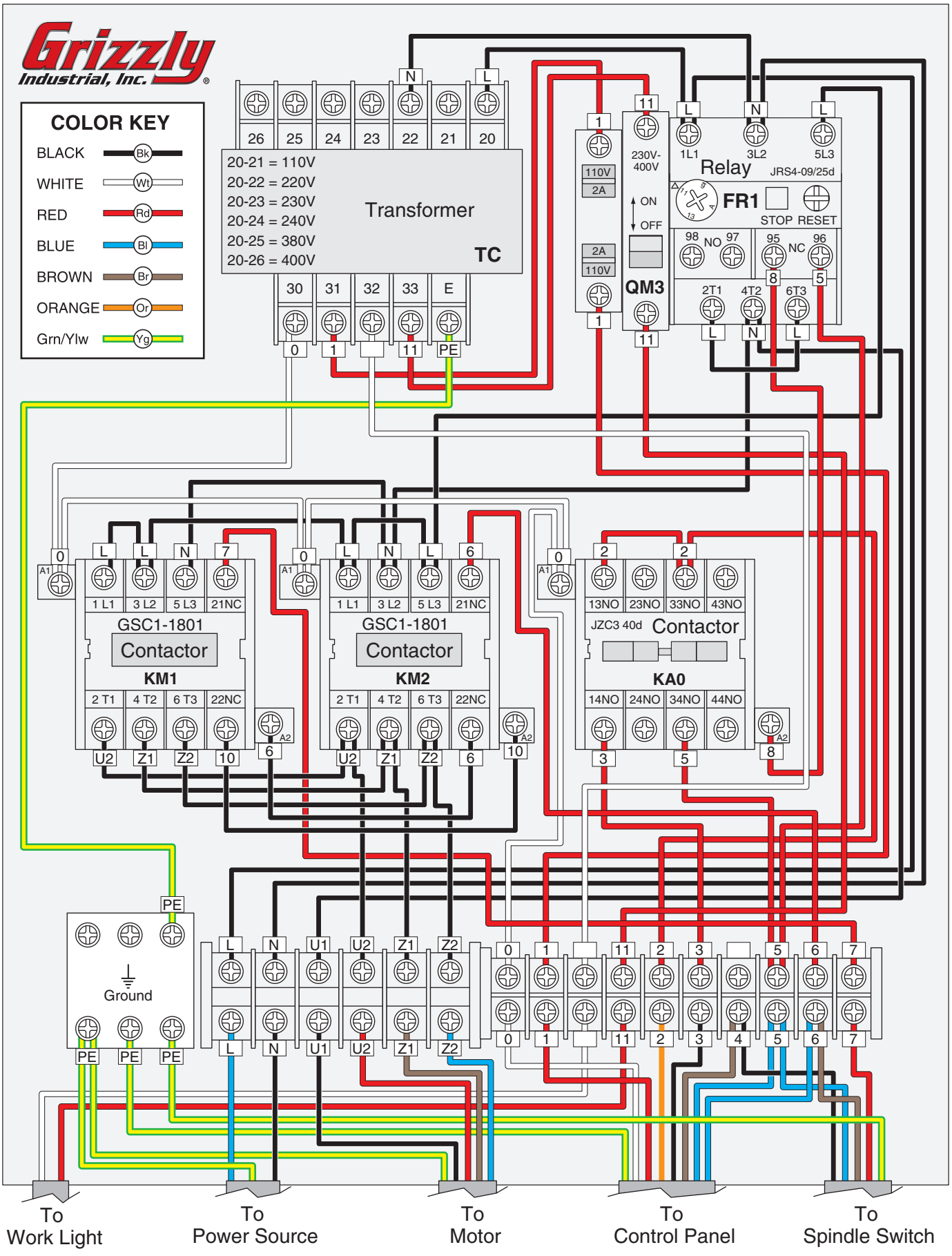


Figure 62. Electrical box wiring.


Grizzly
Industrial, Inc.
COLOR KEY
BLACK Bk
WHITE Wt
RED Rd
BLUE Bl
BROWN Br
ORANGE Or
Grn/Ylw Yg
Transformer
TC
20-21 = 110V
20-22 = 220V
20-23 = 230V
20-24 = 240V
20-25 = 380V
20-26 = 400V
230V-400V
110V
2A
ON
OFF
QM3
Relay
JRS4-09/25d
FR1
STOP RESET
GSC1-1801
Contactor
KM1
KM2
JZC3 40d
KA0
Ground
To Work Light
To Power Source
To Motor
To Control Panel
To Spindle Switch

Wiring—Motor & Control Panel

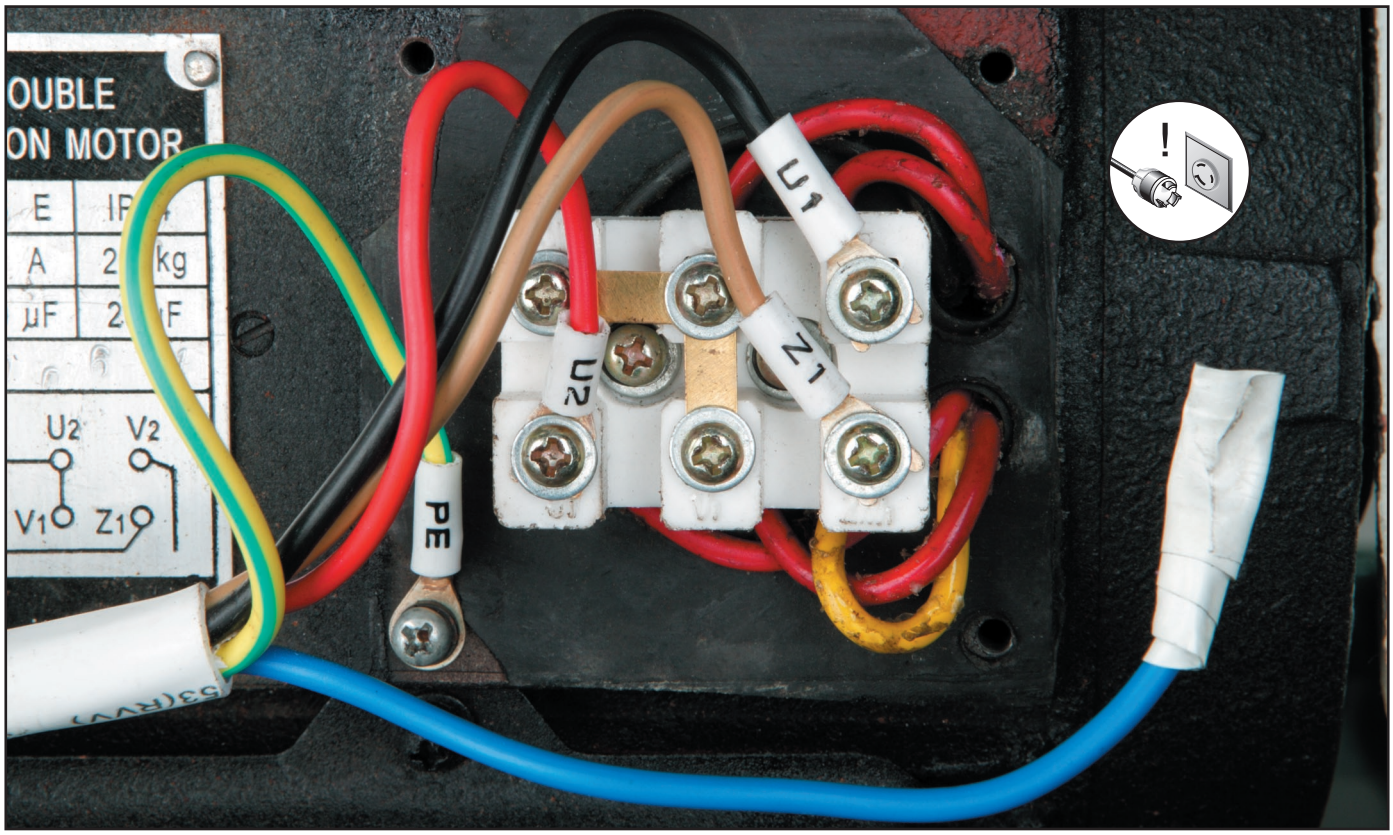


Figure 63. Motor wiring.

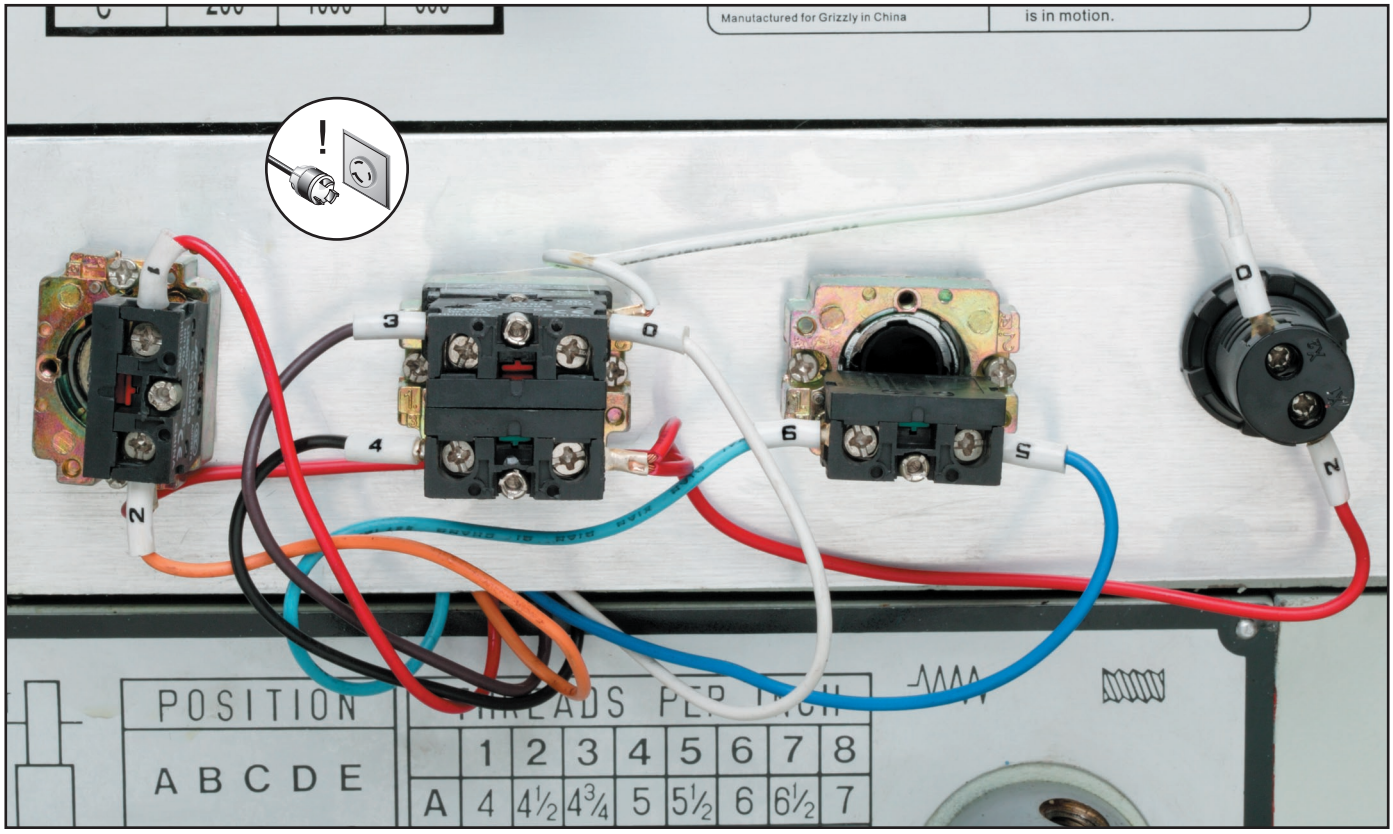
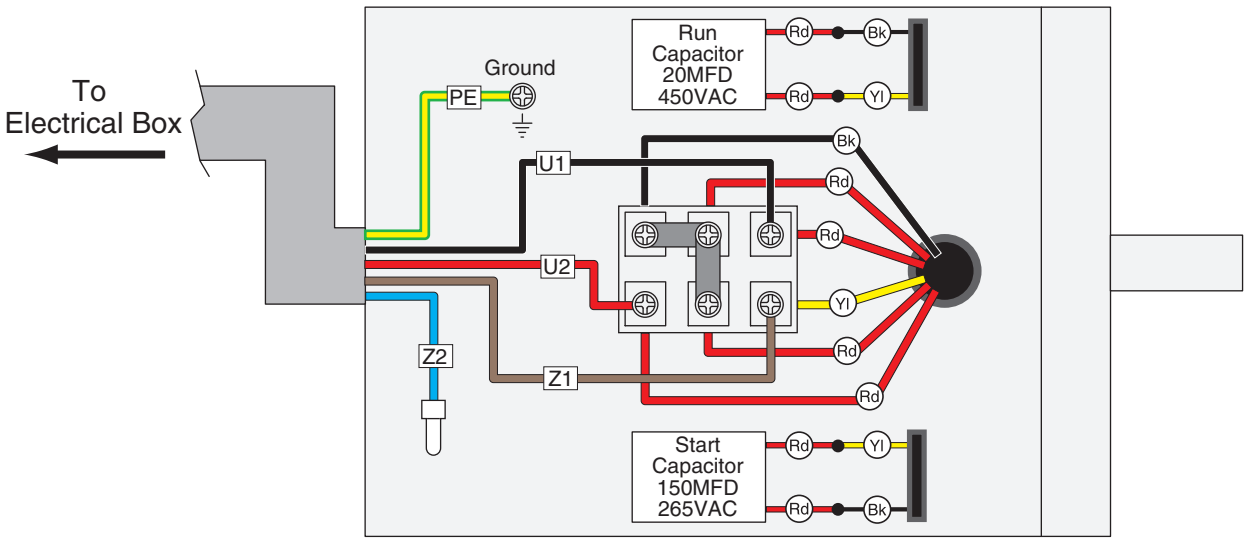


Figure 64. Control panel wiring.

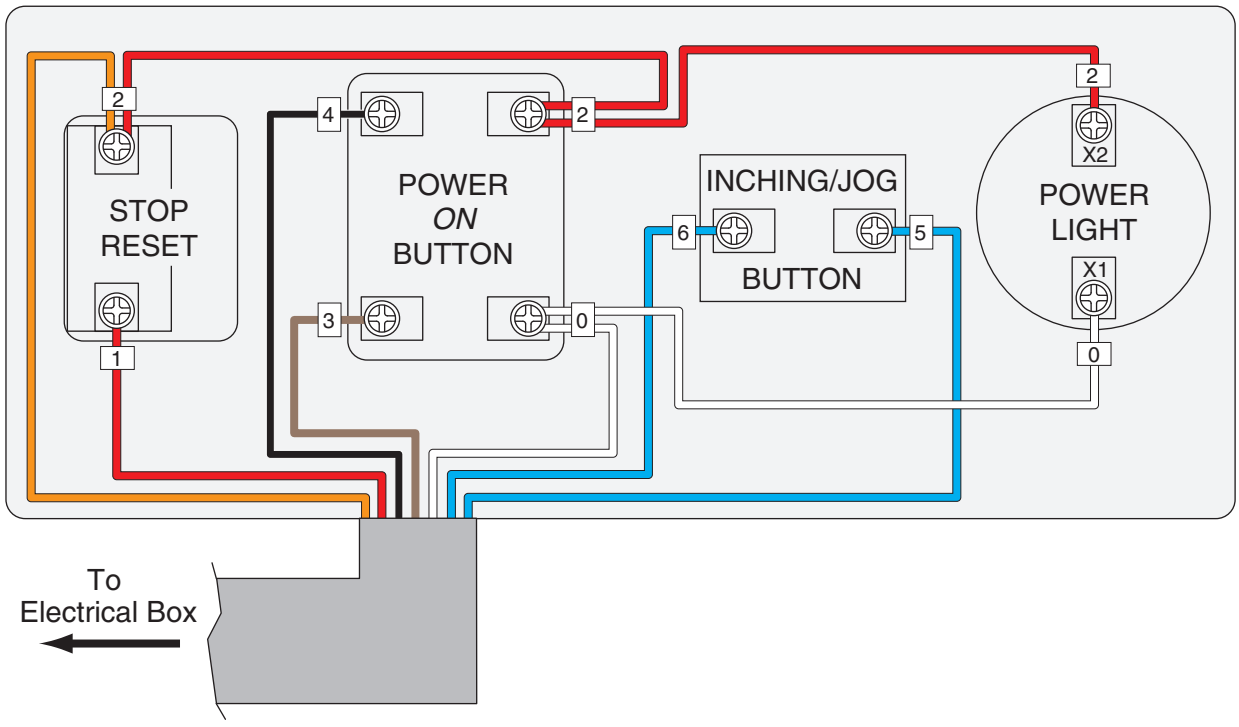
MOTOR 1.5 HP, 220V, Single-Phase



COLOR KEY

BLACK	Bk
WHITE	Wt
RED	Rd
YELLOW	Yl
BLUE	Bl
BROWN	Br
ORANGE	Or
Grn/Ylw	Yg

CONTROL PANEL



Wiring—Plug, Light & Spindle Switch

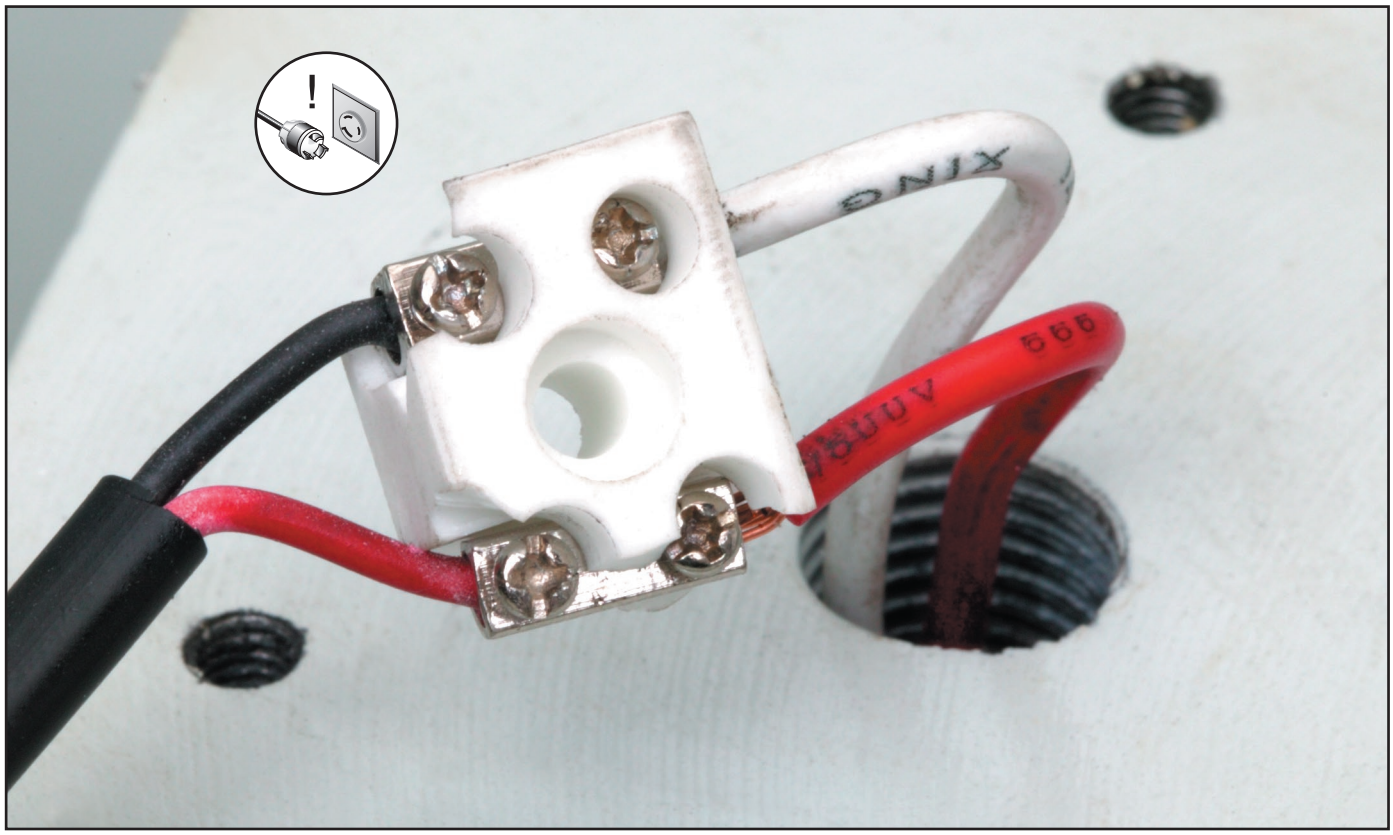


Figure 65. Work light wiring.

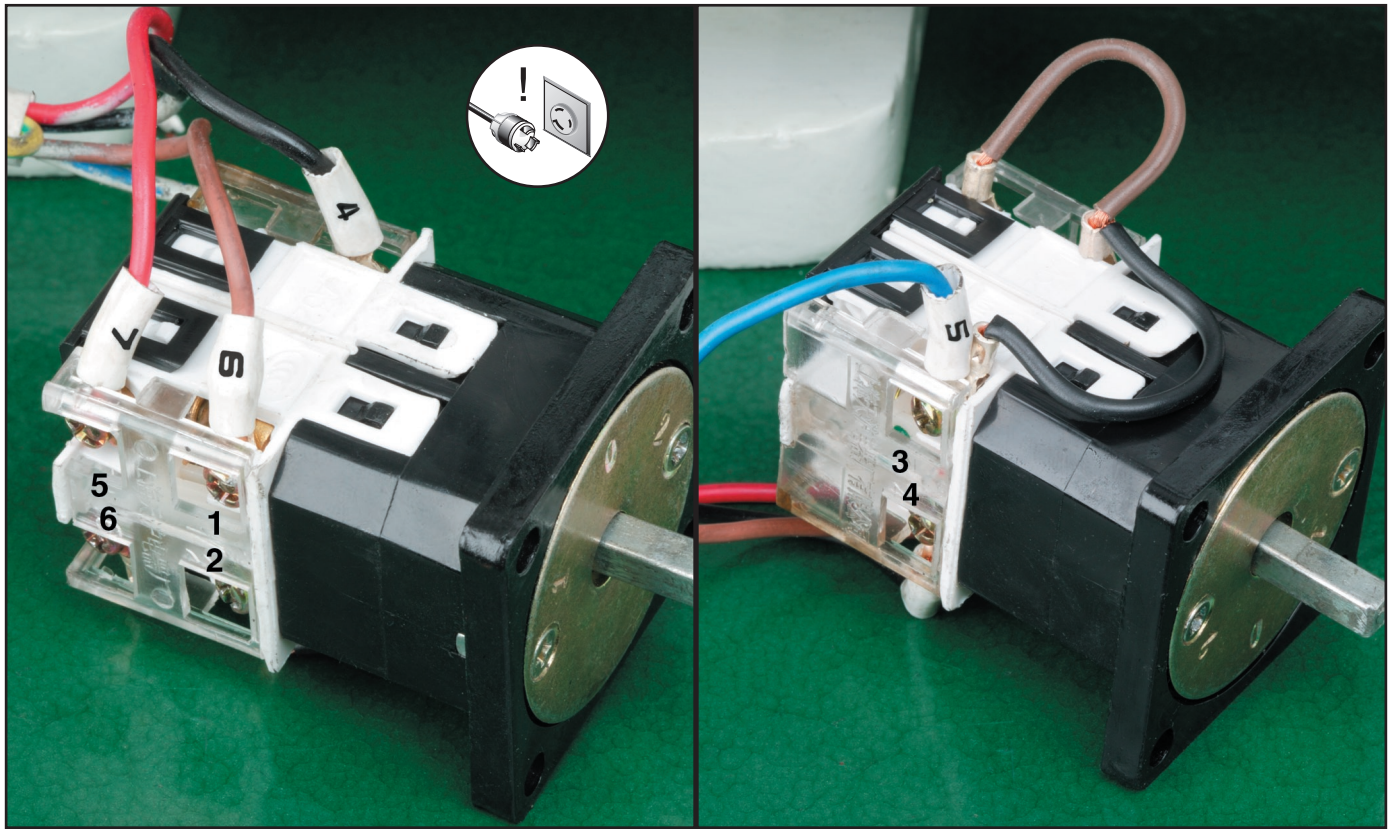
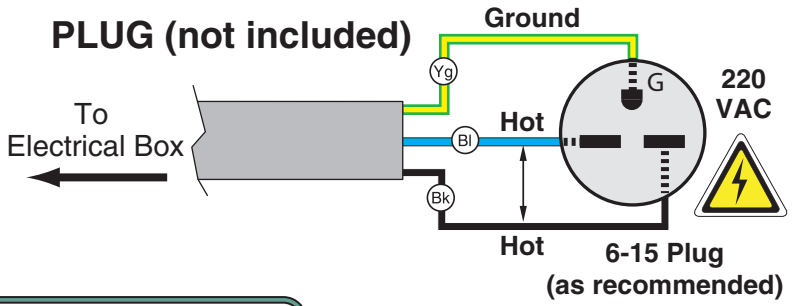


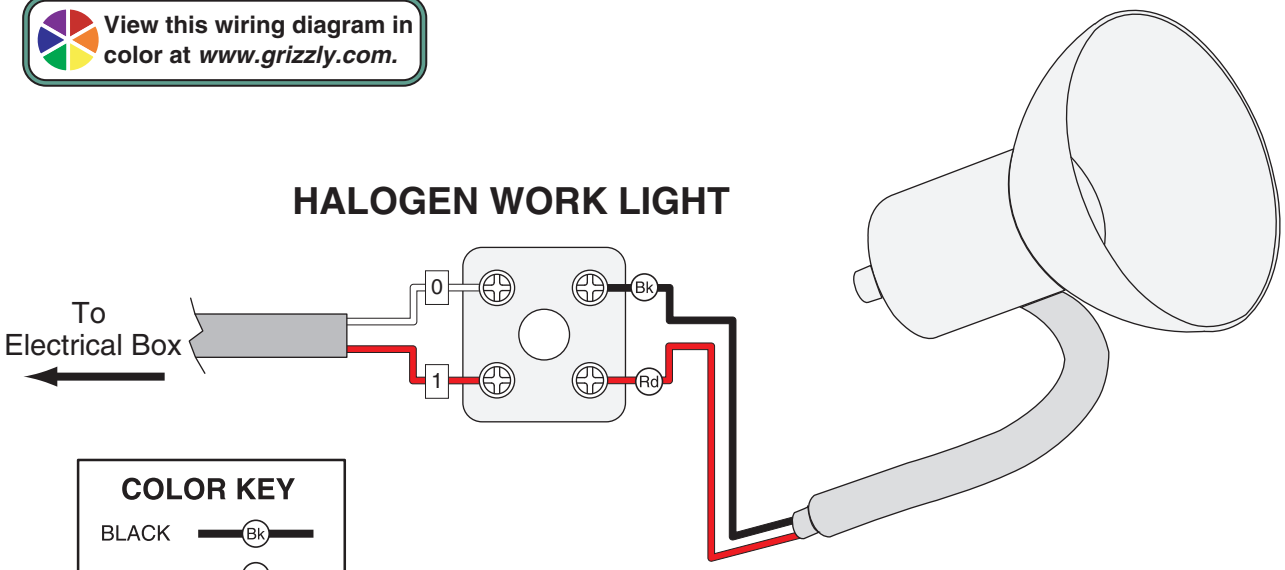
Figure 66. Spindle ON/OFF switch.

PLUG (not included)



View this wiring diagram in color at *www.grizzly.com.*

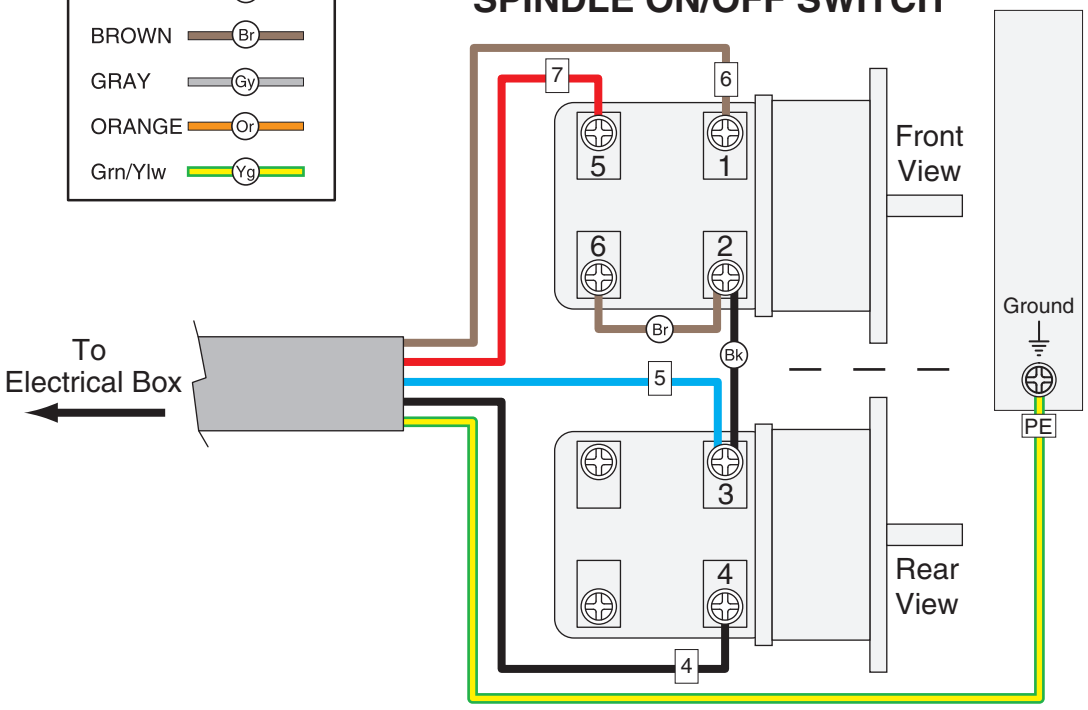
HALOGEN WORK LIGHT



COLOR KEY

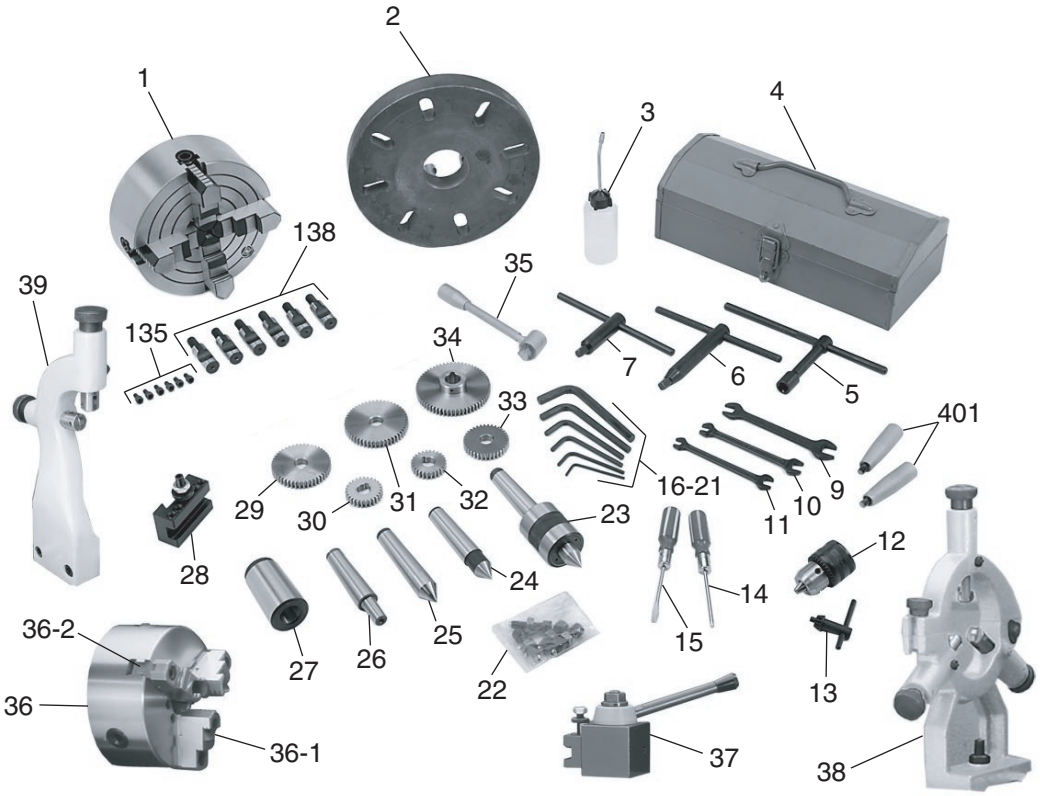
BLACK	Bk
WHITE	Wt
GREEN	Gn
RED	Rd
BLUE	Bl
BROWN	Br
GRAY	Gy
ORANGE	Or
Grn/Ylw	Yg

SPINDLE ON/OFF SWITCH



SECTION 8: PARTS

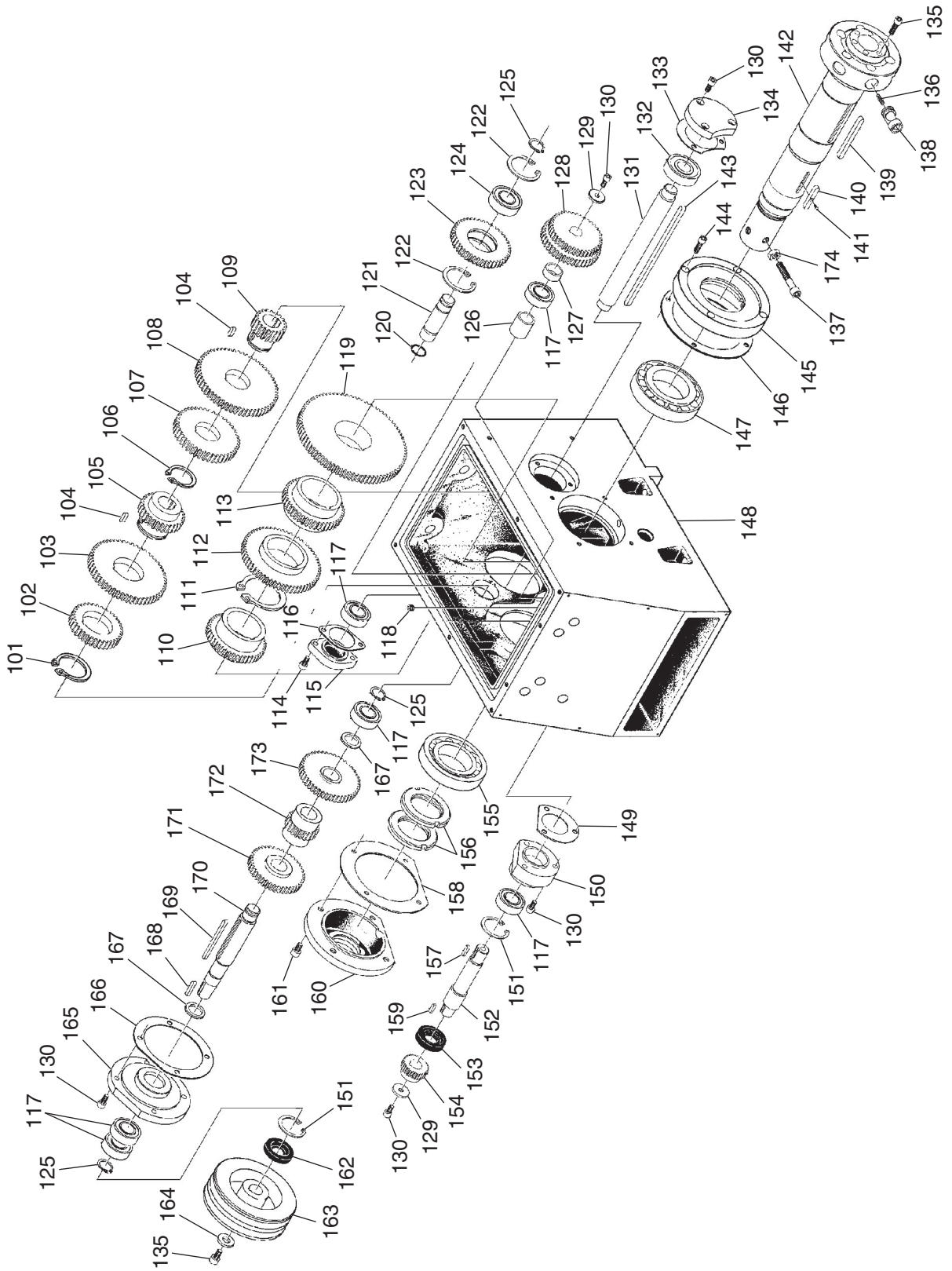
Components



REF	PART #	DESCRIPTION
1	P4003G0001	4-JAW UNIVERSAL CHUCK 8"
2	P4003G0002	FACEPLATE 10"
3	P4003G0003	OIL BOTTLE
4	P4003G0004	TOOL BOX
5	P4003G0005	SQUARE SOCKET T-WRENCH
6	P4003G0006	4-JAW CHUCK WRENCH
7	P4003G0007	3-JAW CHUCK WRENCH
9	PWR1214	COMBO WRENCH 12/14MM
10	PWR1012	COMBO WRENCH 10/12MM
11	P4003G0011	COMBO WRENCH 9/11MM
12	P4003G0012	DRILL CHUCK B16 1.5-13MM
13	P4003G0013	DRILL CHUCK KEY
14	P4003G0014	PHILLIPS HD SCREWDRIVER #2
15	P4003G0015	STANDARD SCREWDRIVER
16	PAW10M	HEX WRENCH 10MM
17	PAW08M	HEX WRENCH 8MM
18	PAW06M	HEX WRENCH 6MM
19	PAW05M	HEX WRENCH 5MM
20	PAW04M	HEX WRENCH 4MM
21	PAW02M	HEX WRENCH 2MM
22	P4003G0022	SPIDER SCREW
23	P4003G0023	LIVE CENTER MT#3

REF	PART #	DESCRIPTION
24	P4003G0024	CARBIDE TIP DEAD CENTER MT#3
25	P4003G0025	STANDARD DEAD CENTER MT#3
26	P4003G0026	ARBOR B16-MT#3
27	P4003G0027	DEAD CENTER SPINDLE SLEEVE
28	P4003G0028	QUICK CHANGE TOOL HOLDER
29	P4003G0029	GEAR 45T
30	P4003G0030	GEAR 27T
31	P4003G0031	GEAR 50T
32	P4003G0032	GEAR 26T
33	P4003G0033	GEAR 35T
34	P4003G0034	GEAR 60T
35	P4003G0035	TAILSTOCK WRENCH
36	P4003G0036	3-JAW CHUCK
36-1	P4003G0036-1	3-JAW CHUCK TOP JAW SET
36-2	P4003G0036-2	3-JAW CHUCK BOTTOM JAW SET
37	P4003G0037	QUICK CHANGE TOOL POST
38	P4003G0038	STEADY REST
39	P4003G0039	FOLLOW REST
135	PSB27M	CAP SCREW M6-1 X 14
138	P4003G0138	CAM LOCK
401	P4003G0401	HANDLE

Gearbox Gearing

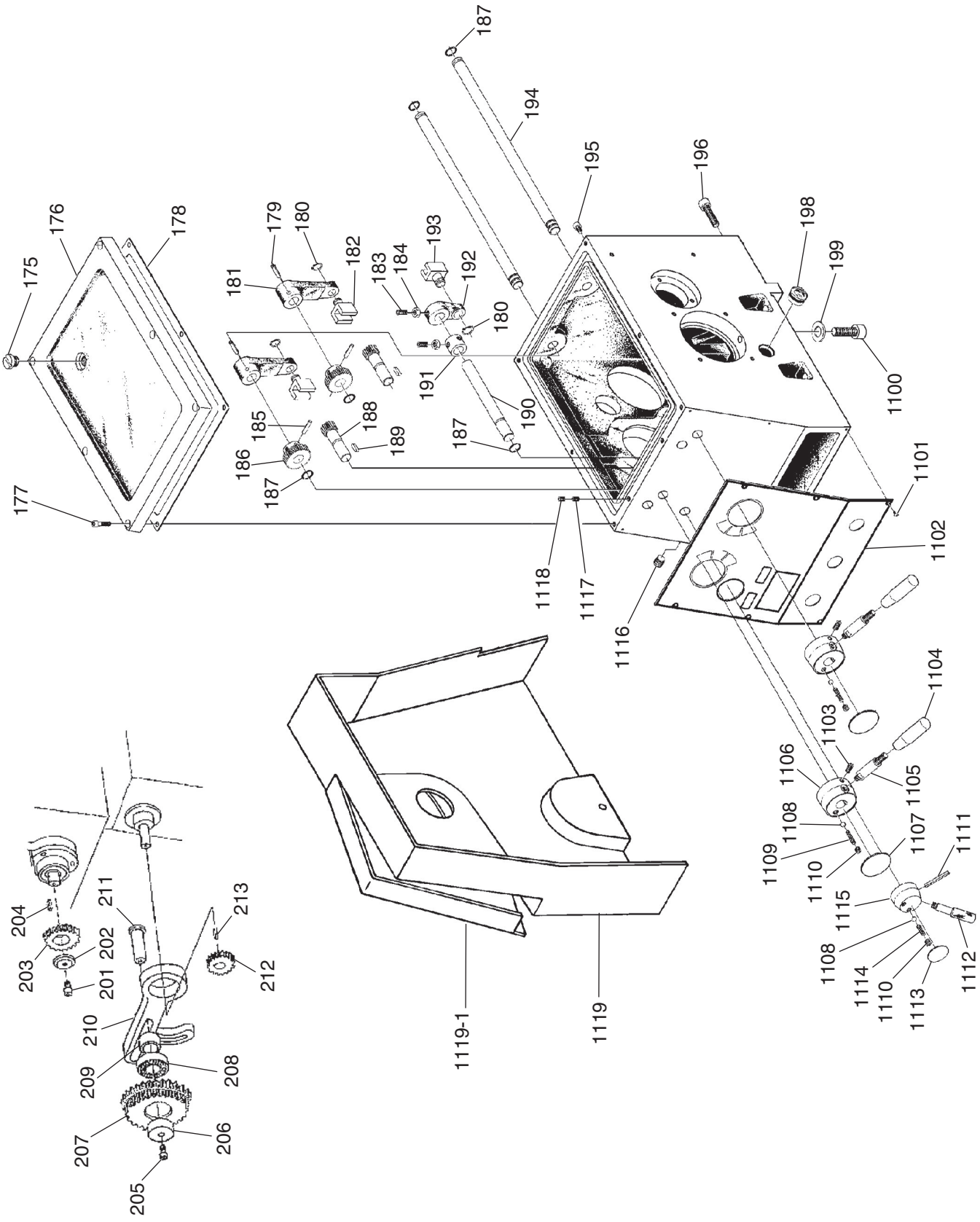


Gearbox Gearing Parts List

REF	PART #	DESCRIPTION
101	PR56M	EXT RETAINING RING 45MM
102	P4003G0102	GEAR 36T
103	P4003G0103	GEAR 55T
104	PK14M	KEY 5 X 5 X 18
105	P4003G0105	GEAR
106	PR30M	EXT RETAINING RING 36MM
107	P4003G0107	GEAR 45T
108	P4003G0108	GEAR 58T
109	P4003G0109	GEAR 21T
110	P4003G0110	GEAR 45T
111	PR82M	EXT RETAINING RING 58MM
112	P4003G0112	GEAR 59T
113	P4003G0113	GEAR 46T
114	PSB27M	CAP SCREW M6-1 X 14
115	P4003G0115	COVER
116	P4003G0116	GASKET
117	P6004	BALL BEARING 6004ZZ
118	PSB35M	CAP SCREW M8-1.25 X 6
119	P4003G0119	GEAR 83T
120	P4003G0120	O-RING 17 X 2.65
121	P4003G0121	SHAFT
122	PR25M	INT RETAINING RING 47MM
123	P4003G0123	GEAR 40/45T
124	P6004	BALL BEARING 6004ZZ
125	PR09M	EXT RETAINING RING 20MM
126	P4003G0126	COLLAR
127	P4003G0127	COLLAR
128	P4003G0128	GEAR 45/40T
129	PW03M	FLAT WASHER 6MM
130	PSB01M	CAP SCREW M6-1 X 16
131	P4003G0131	SHAFT
132	P6004	BALL BEARING 6004ZZ
133	P4003G0133	GASKET
134	P4003G0134	COVER
135	PSB27M	CAP SCREW M6-1 X 14
136	P4003G0136	COMPRESSION SPRING
137	PSB84M	CAP SCREW M10-1.5 X 35

REF	PART #	DESCRIPTION
138	P4003G0138	CAM LOCK
139	P4003G0139	KEY 8 X 8 X 80
140	PK43M	KEY 8 X 8 X 45
141	PSB80M	CAP SCREW M3-.5 X 8
142	P4003G0142	SPINDLE
143	P4003G0143	KEY 8 X 8 X 210
144	PSB02M	CAP SCREW M6-1 X 20
145	P4003G0145	COVER
146	P4003G0146	GASKET
147	P4003G0147	TAPER ROLLER BEARING D7212
148	P4003G0148	HEADSTOCK
149	P4003G0149	GASKET
150	P4003G0150	COVER
151	PR24M	INT RETAINING RING 42MM
152	P4003G0152	SHAFT
153	P4003G0153	OIL SEAL
154	P4003G0154	GEAR
155	P4003G0155	TAPER ROLLER BEARING E7211
156	P4003G0156	THREADED COLLAR
157	PK94M	KEY 5 X 5 X 8
158	P4003G0158	GASKET
159	PK94M	KEY 5 X 5 X 8
160	P4003G0160	COVER
161	PSB58M	CAP SCREW M8-1.25 X 12
162	P4003G0162	OIL SEAL
163	P4003G0163	PULLEY
164	PW03M	FLAT WASHER 6MM
165	P4003G0165	COVER
166	P4003G0166	GASKET
167	P4003G0167	SPECIAL WASHER
168	PK12M	KEY 5 X 5 X 30
169	PK17M	KEY 5 X 5 X 80
170	P4003G0170	SHAFT
171	P4003G0171	GEAR 42T
172	P4003G0172	GEAR 23T
173	P4003G0173	GEAR 47T
174	PN02M	HEX NUT M10-1.5

Gearbox Shifters

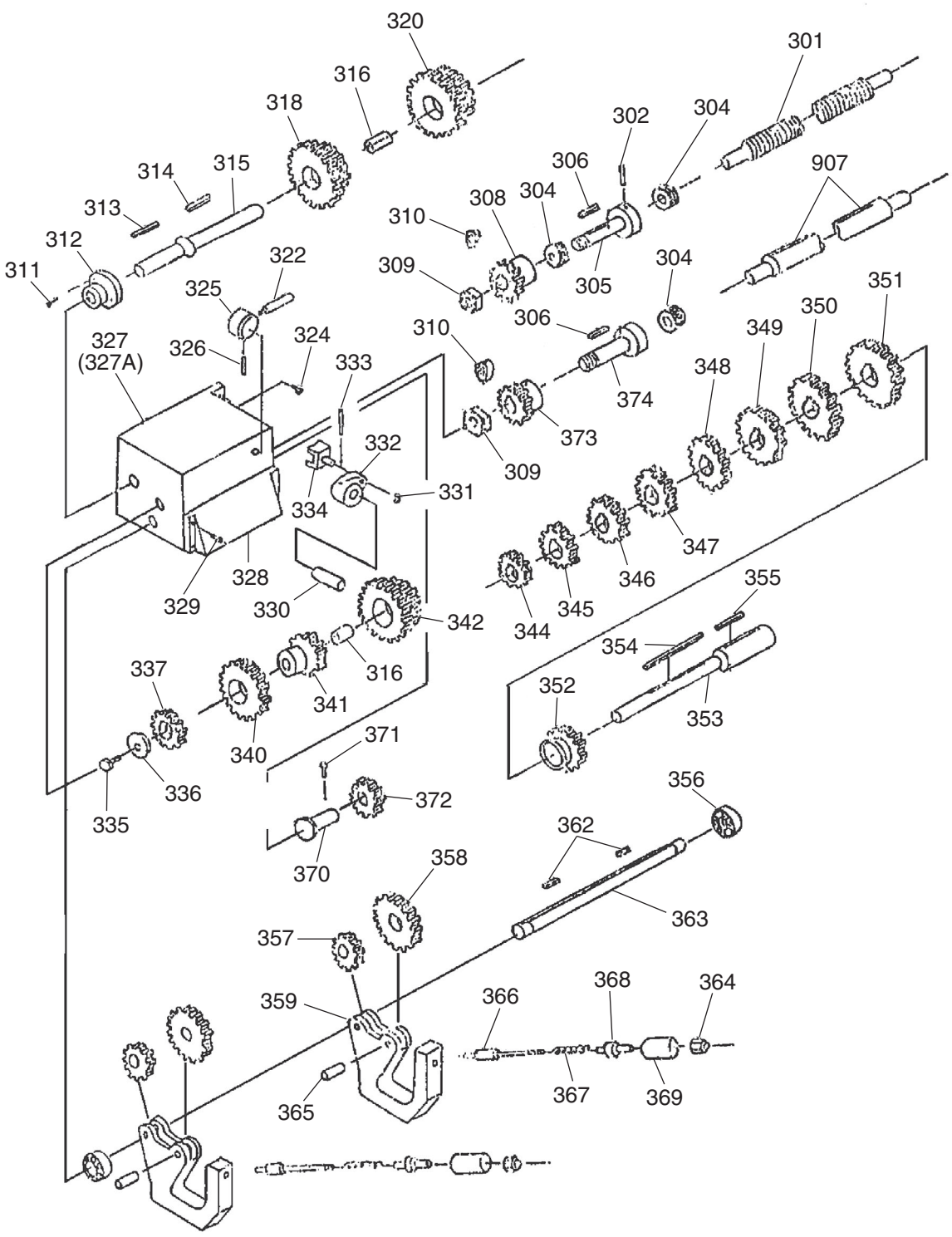


Gearbox Shifters Parts List

REF	PART #	DESCRIPTION
175	P4003G0175	OIL PLUG
176	P4003G0176	COVER
177	PSB06M	CAP SCREW M6-1 X 25
178	P4003G0178	GASKET
179	PRP05M	ROLL PIN 5 X 30
180	PR03M	EXT RETAINING RING 12MM
181	P4003G0181	SHIFTING ARM
182	P4003G0182	SHIFTING FORK
183	PSS06M	SET SCREW M8-1.25 X 16
184	PN03M	HEX NUT M8-1.25
185	PRP49M	ROLL PIN 5 X 25
186	P4003G0186	GEAR 38T
187	P4003G0187	O-RING 11.2 X 2.65
188	P4003G0188	PINION SHAFT
189	PK94M	KEY 5 X 5 X 8
190	P4003G0190	SHAFT
191	P4003G0191	COLLAR
192	P4003G0192	SHIFTING ARM
193	P4003G0193	SHIFTING FORK
194	P4003G0194	SHAFT
195	PSB04M	CAP SCREW M6-1 X 10
196	PSB13M	CAP SCREW M8-1.25 X 30
198	P4003G0198	OIL SIGHT GLASS
199	PW06M	FLAT WASHER 12MM
201	PSB26M	CAP SCREW M6-1 X 12
202	P4003G0202	SPECIAL WASHER
203	P4003G0203	GEAR 40T
204	PK12M	KEY 5 X 5 X 30
205	PSB26M	CAP SCREW M6-1 X 12

REF	PART #	DESCRIPTION
206	P4003G0206	SPECIAL WASHER
207	P4003G0207	STEP GEAR
208	P6202	BALL BEARING 6202ZZ
209	P4003G0209	BUSHING
210	P4003G0210	SHIFTING ARM
211	P4003G0211	SHAFT
212	P4003G0212	GEAR 40T
213	PK12M	KEY 5 X 5 X 30
1100	PSB77M	CAP SCREW M12-1.75 X 30
1101	PS12M	PHLP HD SCR M3-.5 X 6
1102	P4003G1102	FRONT CONTROL PLATE
1103	PSS04M	SET SCREW M6-1 X 12
1104	P4003G1104	HANDLE KNOB
1105	P4003G1105	HANDLE STUD
1106	P4003G1106	HANDLE HUB
1107	P4003G1107	INFORMATION PLATE
1108	P4003G1108	STEEL BALL 6MM
1109	P4003G1109	COMPRESSION SPRING
1110	PSS20M	SET SCREW M8-1.25 X 8
1111	P4003G1111	TAPER PIN
1112	P4003G1112	HANDLE
1113	P4003G1113	INFORMATION PLATE
1114	P4003G1114	COMPRESSION SPRING
1115	P4003G1115	HANDLE HUB
1116	P4003G1116	OIL PLUG
1117	PSS01M	SET SCREW M6-1 X 10
1118	PSS02M	SET SCREW M6-1 X 6
1119	P4003G1119	COVER
1119-1	P4003G1119-1	SPIDER SAFETY COVER

Quick Change System

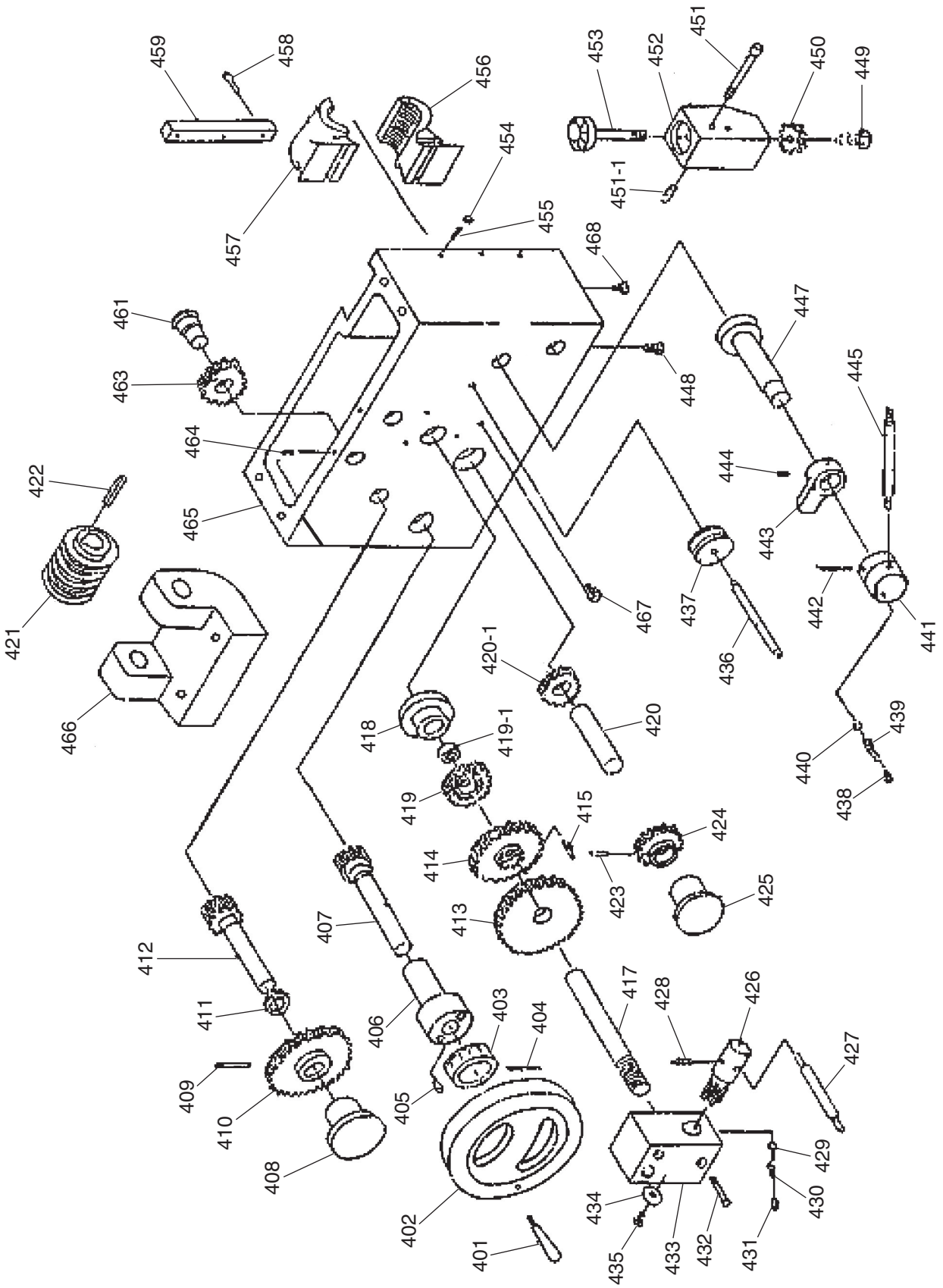


Quick Change System Parts List

REF	PART #	DESCRIPTION
301	P4003G0301	LEAD SCREW
302	PRP10M	ROLL PIN 5 X 36
304	P8103	THRUST BEARING 8103
305	P4003G0305	SHAFT
306	PK19M	KEY 5 X 5 X 14
308	P4003G0308	GEAR
309	PN09M	HEX NUT M12-1.75
310	P4003G0310	SPECIAL WASHER
311	PSB01M	CAP SCREW M6-1 X 16
312	P4003G0312	COVER
313	PK12M	KEY 5 X 5 X 30
314	PK06M	KEY 5 X 5 X 10
315	P4003G0315	SHAFT
316	P4003G0316	BUSHING
318	P4003G0318	GEAR 32/16T
320	P4003G0320	GEAR 32/16T
322	P4003G0322	LEVER
324	PB01M	HEX BOLT M10-1.5 X 30
325	P4003G0325	BOSS
326	PRP28M	ROLL PIN 5 X 40
327	P4003G0327	GEARBOX
327A	P4003G0327A	GEARBOX ASSEMBLY
328	P4003G0328	PLATE
329	PSB01M	CAP SCREW M6-1 X 16
330	P4003G0330	SHAFT
331	PEC04M	E-CLIP 13MM
332	P4003G0332	SHIFT PIVOT
333	PRP73M	ROLL PIN 4 X 30
334	P4003G0334	SHIFT FORK
335	PSB26M	CAP SCREW M6-1 X 12
336	P4003G0336	SPECIAL WASHER
337	P4003G0337	GEAR 16T
340	P4003G0340	GEAR 32T

REF	PART #	DESCRIPTION
341	P4003G0341	GEAR 16T
342	P4003G0342	GEAR 32T
343	P4003G0343	GEAR 16T
344	P4003G0344	GEAR 16T
345	P4003G0345	GEAR 18T
346	P4003G0346	GEAR 19T
347	P4003G0347	GEAR 20T
348	P4003G0348	GEAR 22T
349	P4003G0349	GEAR 24T
350	P4003G0350	GEAR 26T
351	P4003G0351	GEAR 28T
352	P4003G0352	GEAR 24T
353	P4003G0353	SHAFT
354	PK120M	KEY 5 X 5 X 75
355	PK02M	KEY 5 X 5 X 40
356	P4003G0356	ANG CONTACT BEARING 7000
357	P4003G0357	GEAR 16T
358	P4003G0358	GEAR 32T
359	P4003G0359	SHIFT LEVER
362	P4003G0362	SHIFT ROD KEY
363	P4003G0363	SHIFT ROD
364	PN01M	HEX NUT M6-1
365	P4003G0365	SHAFT
366	P4003G0366	SHAFT
367	P4003G0367	SPRING
368	P4003G0368	SLEEVE
369	P4003G0369	HOUSING
370	P4003G0370	SHAFT
371	PSS20M	SET SCREW M8-1.25 X 8
372	P4003G0372	GEAR 15T
373	P4003G0373	GEAR 24T
374	P4003G0374	SHAFT

Apron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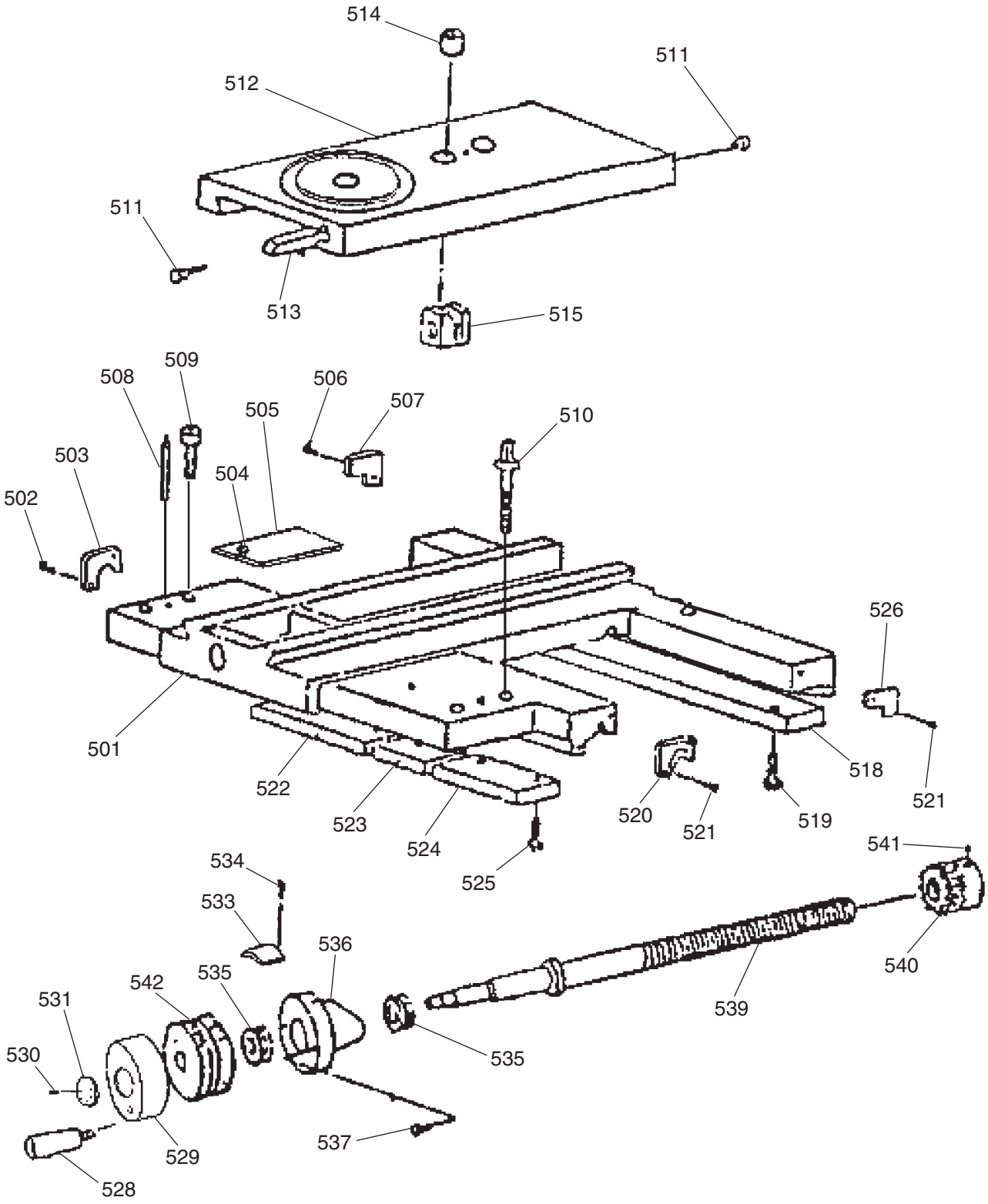
Apron Parts List

REF	PART #	DESCRIPTION
401	P4003G0401	HANDLE
402	P4003G0402	HANDWHEEL
403	P4003G0403	GRADUATED DIAL
404	PRP28M	ROLL PIN 5 X 40
405	PSS25M	SET SCREW M6-1 X 20
406	P4003G0406	BRACKET
407	P4003G0407	GEAR SHAFT
408	P4003G0408	KNOB
409	PRP05M	ROLL PIN 5 X 30
410	P4003G0410	GEAR
411	PR08M	EXT RETAINING RING 19MM
412	P4003G0412	GEAR SHAFT 11T
413	P4003G0413	GEAR 48T
414	P4003G0414	GEAR 51T
415	PRP05M	ROLL PIN 5 X 30
417	P4003G0417	SHAFT
418	P4003G0418	BUSHING
419	P4003G0419	GEAR 25T
419-1	P4003G0419-1	SPACER
420	P4003G0420	SHAFT
420-1	P4003G0420-1	GEAR 24T
421	P4003G0421	WORM GEAR
422	PK33M	KEY 5 X 5 X 45
423	PRP06M	ROLL PIN 5 X 24
424	P4003G0424	GEAR 14T
425	P4003G0425	KNOB
426	P4003G0426	GEAR SHAFT 10T
427	P4003G0427	LEVER
428	PRP06M	ROLL PIN 5 X 24
429	P4003G0429	STEEL BALL 6MM
430	P4003G0430	COMPRESSION SPRING
431	PSS03M	SET SCREW M6-1 X 8
432	PSB30M	CAP SCREW M6-1 X 45
433	P4003G0433	BOSS

REF	PART #	DESCRIPTION
434	PW03M	FLAT WASHER 6MM
435	PSB29M	CAP SCREW M6-1 X 40
436	P4003G0436	SHAFT
437	P4003G0437	SAFETY SHIFTER
438	PSS17M	SET SCREW M8-1.25 X 6
439	P4003G0439	COMPRESSION SPRING
440	P4003G0440	STEEL BALL 6MM
441	P4003G0441	BOSS
442	PRP32M	ROLL PIN 6 X 40
443	P4003G0443	DOG
444	PSS19M	SET SCREW M8-1.25 X 30
445	P4003G0445	LEVER
447	P4003G0447	SHAFT
448	PSB127M	CAP SCREW M6-1X 65
449	PSB28M	CAP SCREW M6-1 X 15
450	P4003G0450	GEAR
451	PSB49M	CAP SCREW M6-1 X 60
451-1	P4003G0451-1	SPACER
452	P4003G0452	HOUSING
453	P4003G0453	THREAD DIAL
454	PN01M	HEX NUT M6-1
455	PSS11M	SET SCREW M6-1 X 16
456	P4003G0456	HALF NUT
457	P4003G0457	HALF NUT HOUSING
458	PSS12M	SET SCREW M6-1 X 25
459	P4003G0459	GIB
461	P4003G0461	SHAFT
463	P4003G0463	GEAR 25T
464	PSS02M	SET SCREW M6-1 X 6
465	P4003G0465	APRON CASE
466	P4003G0466	WORM BRACKET
467	P4003G0467	LIMIT BLOCK
468	PSB61M	CAP SCREW M10-1.5 X 20

Saddle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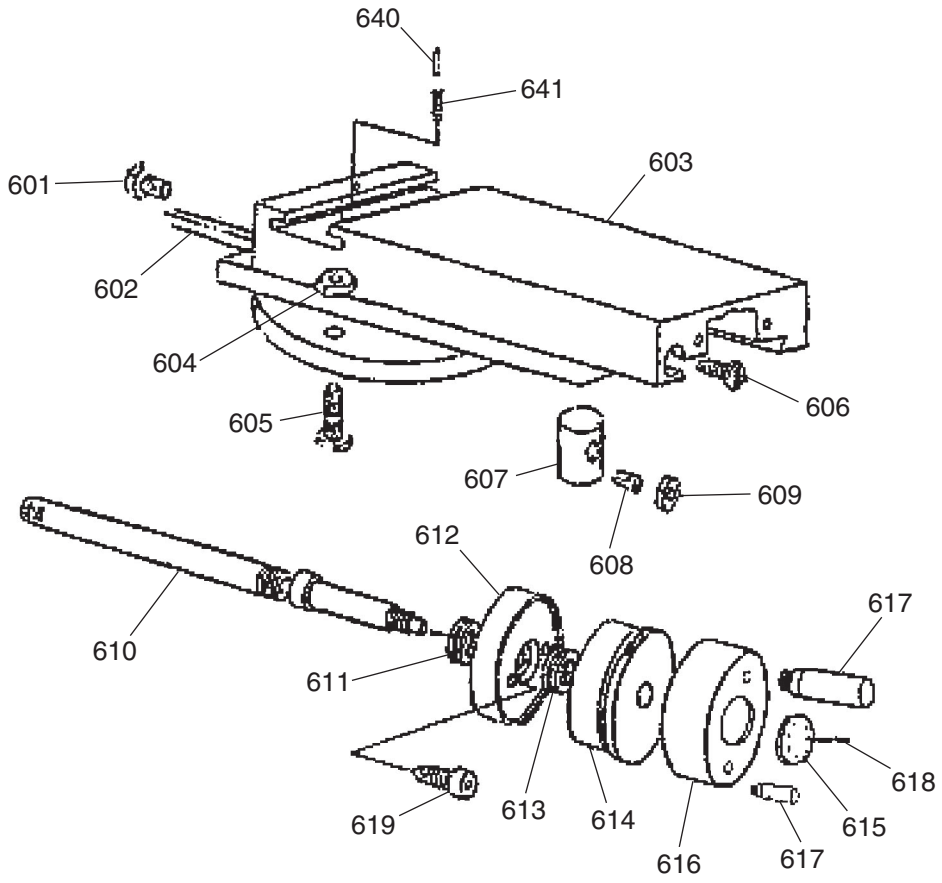
Saddle Parts List

REF	PART #	DESCRIPTION
501	P4003G0501	SADDLE
502	PS59M	PHLP HD SCR M3-.5 X 14
503	P4003G0503	WIPER
504	PS24	PHLP HD SCR 8-32 x 3/8
505	P4003G0505	COVER
506	PS57M	PHLP HD SCR M5-.8 X 14
507	P4003G0507	WIPER
508	PRP29M	ROLL PIN 5 X 45
509	PSB40M	CAP SCREW M8-1.25 X 35
510	P4003G0510	SPECIAL SCREW
511	P4003G0511	SPECIAL SCREW
512	P4003G0512	CROSS SLIDE
513	P4003G0513	GIB
514	P4003G0514	BUSHING
515	P4003G0515	BRASS CROSS SLIDE NUT M8 X 12
518	P4003G0518	SLIDE PLATE
519	PFH21M	FLAT HD SCR M8-1.25 X 25
520	P4003G0520	WIPER

REF	PART #	DESCRIPTION
521	PS57M	PHLP HD SCR M5-.8 X 14
522	P4003G0522	SLIDE PLATE
523	P4003G0523	SLIDE PLATE
524	P4003G0524	SLIDE PLATE
525	PB19M	HEX BOLT M8-1.25 X 24
526	P4003G0526	WIPER
528	P4003G0528	HANDLE
529	P4003G0529	BRACKET
530	P4003G0530	SPECIAL SCREW
531	P4003G0531	SPANNER NUT
533	P4003G0533	INDICATOR PLATE
534	P4003G0534	SPECIAL SCREW
535	P8102	THRUST BEARING 8102
536	P4003G0536	BRACKET
537	PSB06M	CAP SCREW M6-1 X 25
539	P4003G0539	LEAD SCREW
540	P4003G0540	GEAR 13T
541	PSS20M	SET SCREW M8-1.25 X 8

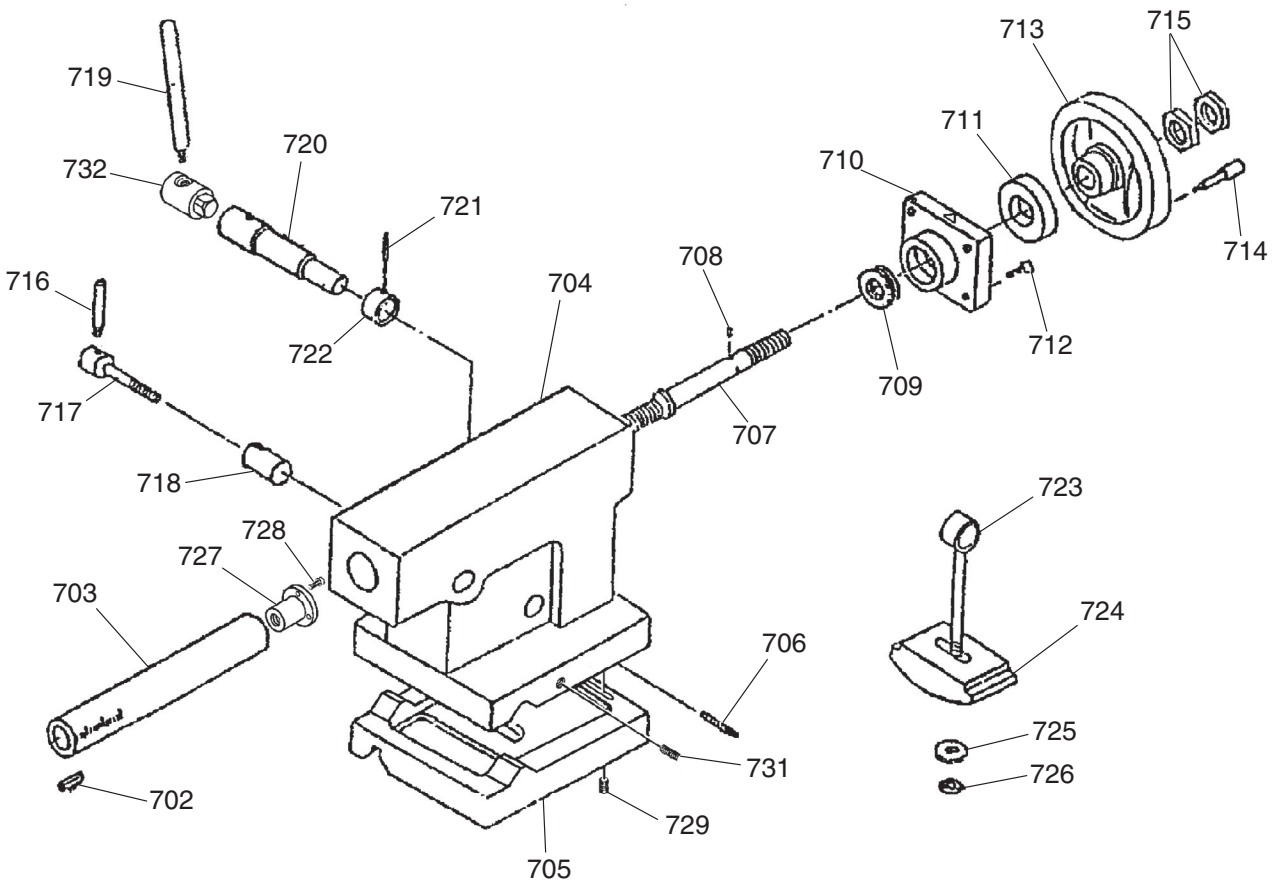
Compound Slide



REF	PART #	DESCRIPTION
601	P4003G0601	SPECIAL SCREW
602	P4003G0602	GIB
603	P4003G0603	COMPOUND SLIDE
604	PN02M	HEX NUT M10-1.5
605	P4003G0605	SPECIAL SCREW
606	P4003G0606	SPECIAL SCREW
607	P4003G0607	LEAD SCREW NUT
608	PSS03M	SET SCREW M6-1 X 8
609	PN01M	HEX NUT M6-1
610	P4003G0610	LEAD SCREW
611	P8101	THRUST BEARING 8101

REF	PART #	DESCRIPTION
612	P4003G0612	BRACKET
613	P8101	THRUST BEARING 8101
614	P4003G0614	GRADUATED DIAL
615	P4003G0615	SPANNER NUT
616	P4003G0616	BRACKET
617	P4003G0617	HANDLE LARGE
617A	P4003G0617A	HANDLE SMALL
618	PSS07M	SET SCREW M5-.8 X 5
619	PSB28M	CAP SCREW M6-1 X 15
640	P4003G0640	PIN
641	P4003G0641	SPECIAL SCREW

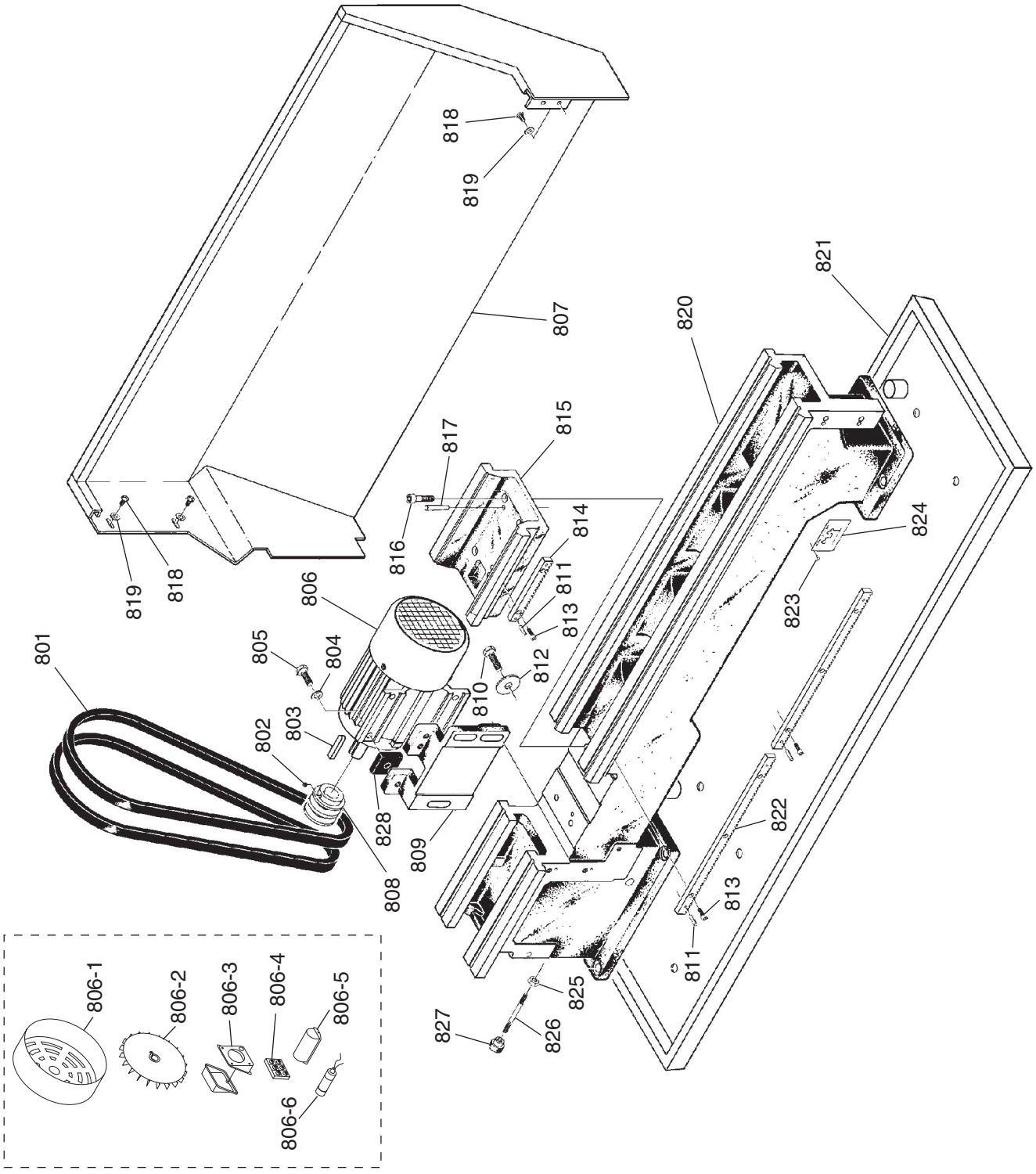
Tailstock



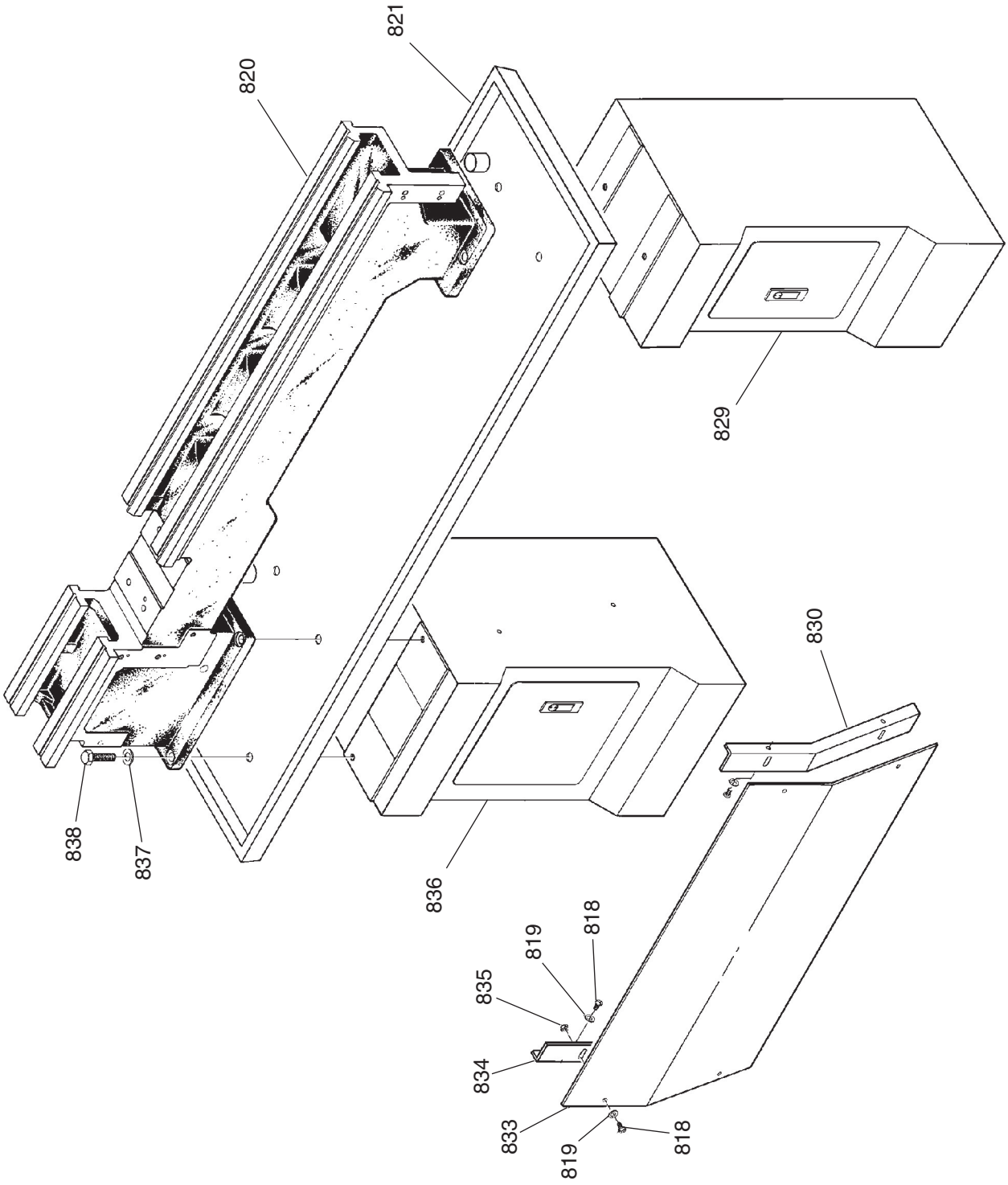
REF	PART #	DESCRIPTION
702	PK136M	KEY 8 X 8 X 30
703	P4003G0703	QUILL
704	P4003G0704	TAILSTOCK
705	P4003G0705	BASE
706	PSS39M	SET SCREW M10-1.5 X 50
707	P4003G0707	SPECIAL SCREW
708	P4003G0708	PIN
709	P4003G0709	BALL BEARING 8101
710	P4003G0710	BRACKET
711	P4003G0711	GRADUATED DIAL
712	PSB02M	CAP SCREW M6-1 X 20
713	P4003G0713	HANDWHEEL
714	P4003G0714	HANDLE
715	PN09M	HEX NUT M12-1.75
716	P4003G0716	HANDLE

REF	PART #	DESCRIPTION
717	P4003G0717	LOCK SCREW
718	P4003G0718	LOCK SHAFT
719	P4003G0719	HANDLE
720	P4003G0720	SHAFT
721	PRP05M	ROLL PIN 5 X 30
722	P4003G0722	COLLAR
723	P4003G0723	SHAFT
724	P4003G0724	BASE SHOE BLOCK
725	PW06M	FLAT WASHER 12MM
726	PN09M	HEX NUT M12-1.75
727	P4003G0727	SPECIAL NUT
728	PSB17M	CAP SCREW M4-.7 X 10
729	PSS28M	SET SCREW M6-1 X 30
731	PSS42M	SET SCREW M8-1.25 X 50
732	P4003G0732	HANDLE BASE

Lathe Bed & Motor



Base

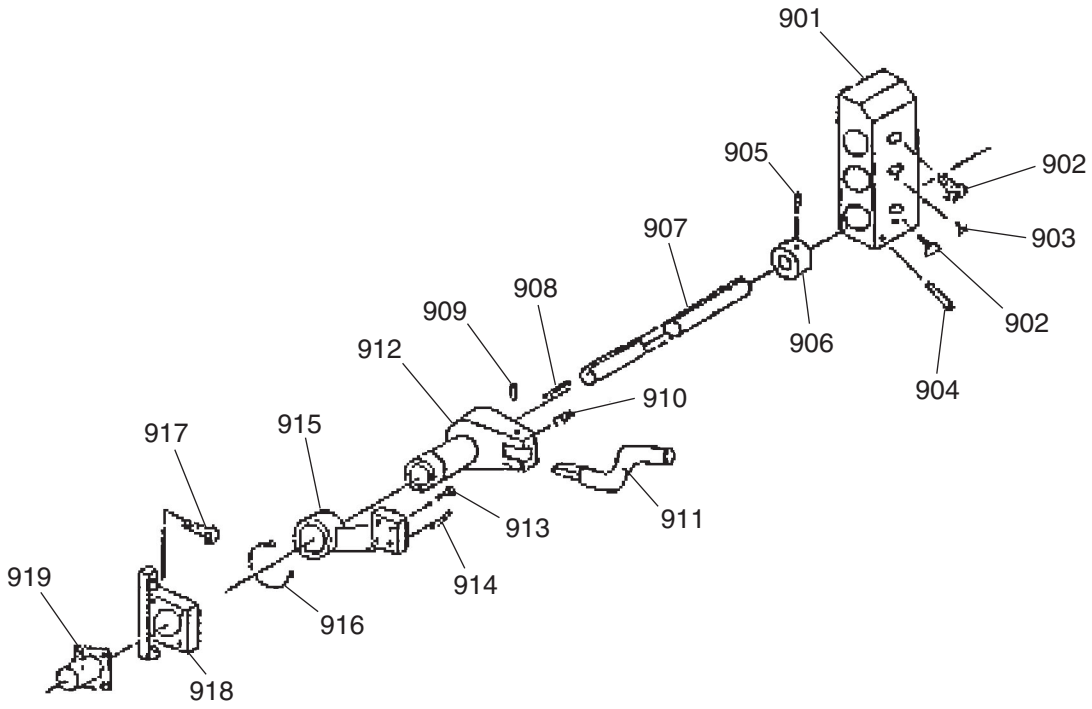


Lathe Bed, Motor & Base Parts List

REF	PART #	DESCRIPTION
801	PVA32	V-BELT A-32 4L320
802	PSS05M	SET SCREW M5-.8 X 10
803	P4003G0803	HEAD KEY
804	PW04M	FLAT WASHER 10MM
805	PB32M	HEX BOLT M10-1.5 X 25
806	P4003G0806	MOTOR 2HP/220V/1-PH
806-1	P4003G0806-1	MOTOR FAN COVER
806-2	P4003G0806-2	MOTOR FAN
806-3	P4003G0806-3	MOTOR JUNCTION BOX
806-4	P4003G0806-4	MOTOR TERMINAL BLOCK
806-5	P4003G0806-5	MOTOR CAPACITOR COVER
806-6	P4003G0806-6	CAPACITOR 150MFD/250VAC
807	P4003G0807	SPLASH GUARD
808	P4003G0808	PULLEY
809	P4003G0809	BRACKET
810	PB01M	HEX BOLT M10-2.5 X 30
811	PRP49M	ROLL PIN 5 X 25
812	PW04M	FLAT WASHER 10MM
813	PSB06M	CAP SCREW M6-1 X 25
814	P4003G0814	RACK GEAR
815	P4003G0815	GAP PIECE

REF	PART #	DESCRIPTION
816	PSB70M	CAP SCREW M10-1.5 X 45
817	P4003G0817	THREADED TAPER PIN
818	PS68M	PHLP HD SCR M6-1 X 10
819	PW03M	FLAT WASHER 6MM
820	P4003G0820	LATHE BED
821	P4003G0821	CHIP PAN
822	P4003G0822	RACK GEAR
823	P4003G0823	RIVET 2 X 5
824	P4003G0824	INFORMATION PLATE
825	PN02M	HEX NUT M10-1.5
826	P4003G0826	SPECIAL STUD
827	P4003G0827	SPECIAL NUT
828	P4003G0828	SPACER BLOCK
829	P4003G0829	RIGHT STAND BASE
830	P4003G0830	RIGHT BRACKET
833	P4003G0833	FRONT PLATE
834	P4003G0834	LEFT BRACKET
835	PN01M	HEX NUT M6-1
836	P4003G0836	LEFT STAND BASE
837	PW10M	FLAT WASHER 14MM
838	PB129M	HEX BOLT M14-2 X 45

Feed Rod

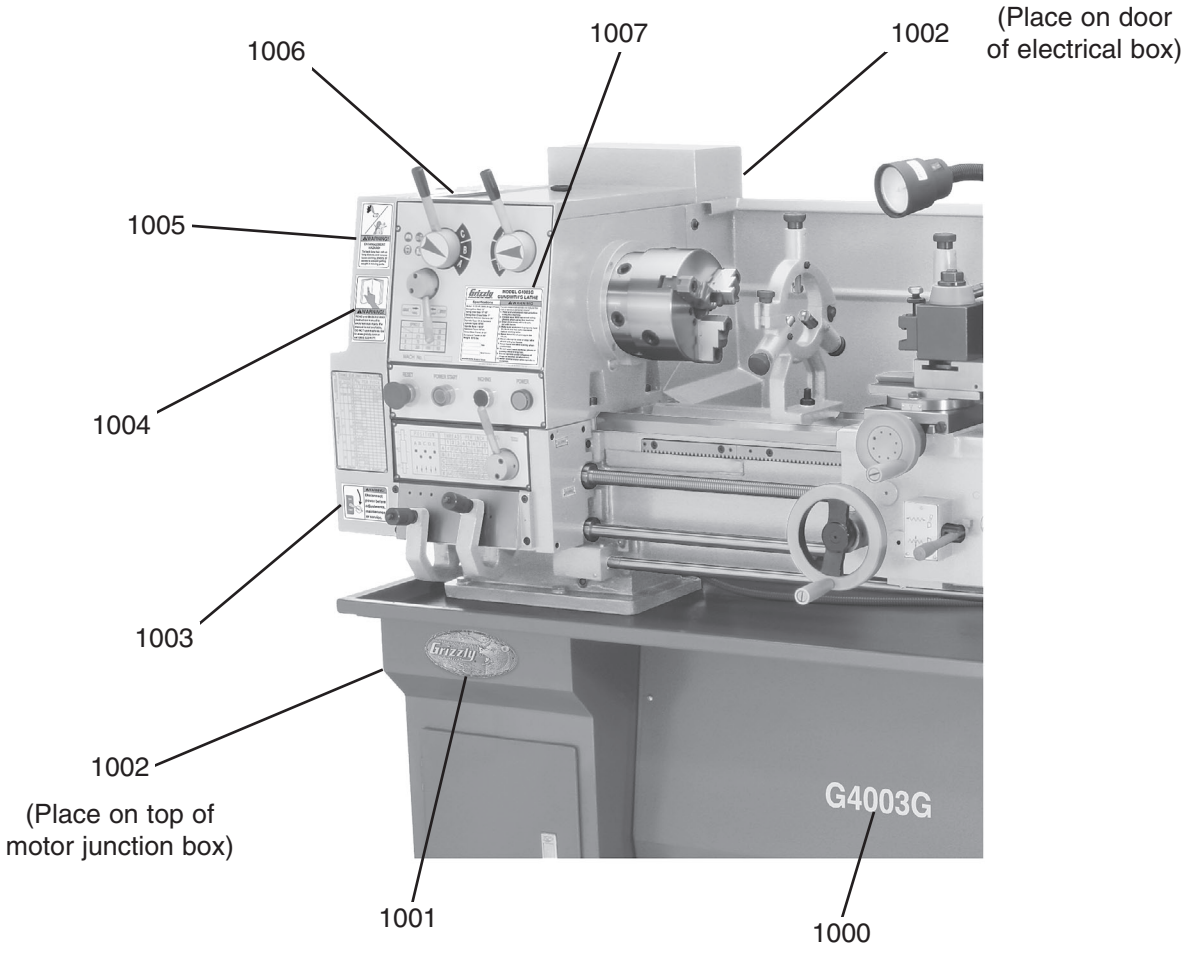


Feed Rod Parts List

REF	PART #	DESCRIPTION
901	P4003G0901	BRACKET
902	PSB25M	CAP SCREW M6-1 X 11
903	P4003G0903	OIL CAP
904	PRP34M	ROLL PIN 6 X 55
905	PSS02M	SET SCREW M6-1 X 6
906	P4003G0906	COLLAR
907	P4003G0907	FEED ROD
908	P4003G0908	KEY
909	PRP39M	ROLL PIN 4 X 20
910	P4003G0910	SPRING 7020

REF	PART #	DESCRIPTION
911	P4003G0911	HANDLE
912	P4003G0912	BRACKET
913	PSB27M	CAP SCREW M6-1 X 14
914	PRP49M	ROLL PIN 5 X 25
915	P4003G0915	BRACKET
916	PR15M	EXT RETAINING RING 30MM
917	PSB31M	CAP SCREW M8-1.25 X 25
918	P4003G0918	BRACKET
919	P4003G0919	SWITCH

Machine Labels



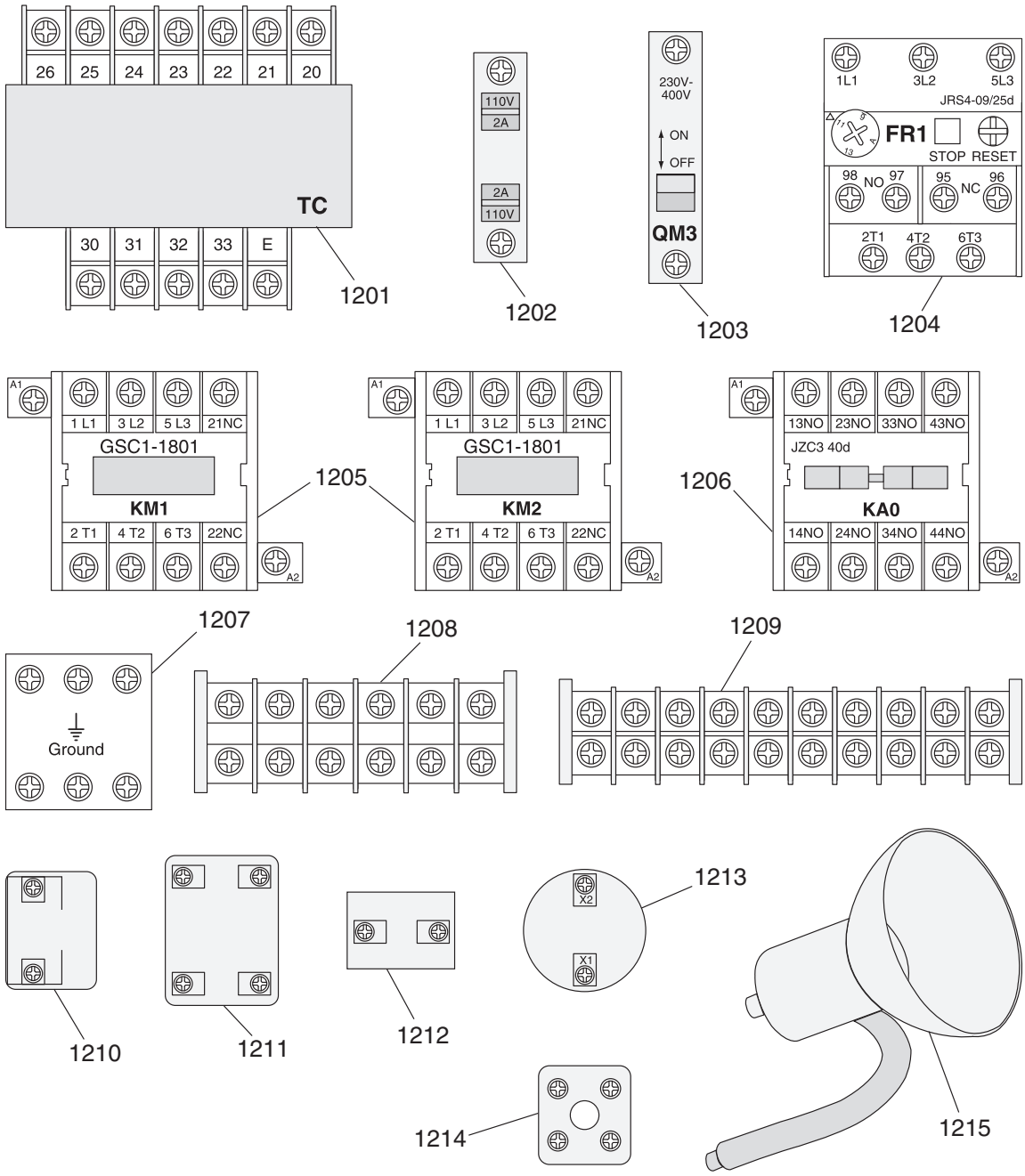
REF	PART #	DESCRIPTION
1000	P4003G1000	MODEL NUMBER LABEL
1001	G9987	GRIZZLY NAMEPLATE
1002	PLABEL-14	ELECTRICITY LABEL
1003	P4003G1003	DISCONNECT LABEL

REF	PART #	DESCRIPTION
1004	PLABEL-12	READ MANUAL LABEL
1005	P4003G1005	ENTANGLEMENT HAZARD LABEL
1006	PLABEL-11	SAFETY GLASSES LABEL
1007	P4003G1007	MACHINE ID LABEL

⚠WARNING

Safety labels warn about machine hazards and ways to prevent injury. The owner of this machine MUST maintain the original location and readability of the labels on the machine. If any label is removed or becomes unreadable, REPLACE that label before using the machine again. Contact Grizzly at (800) 523-4777 or www.grizzly.com to order new labels.

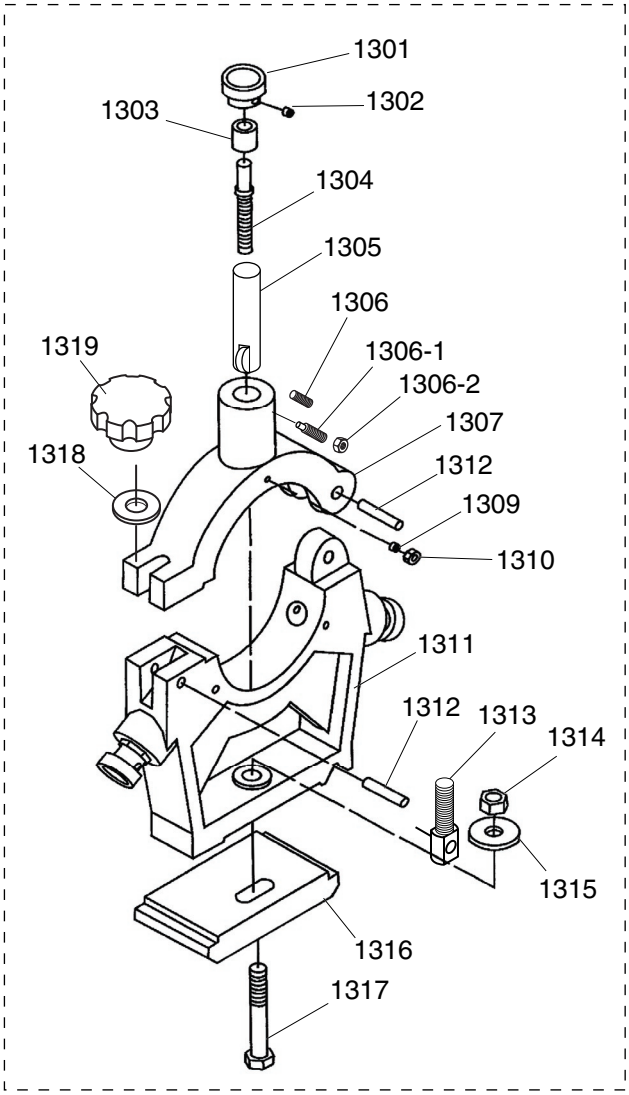
Electrical Components



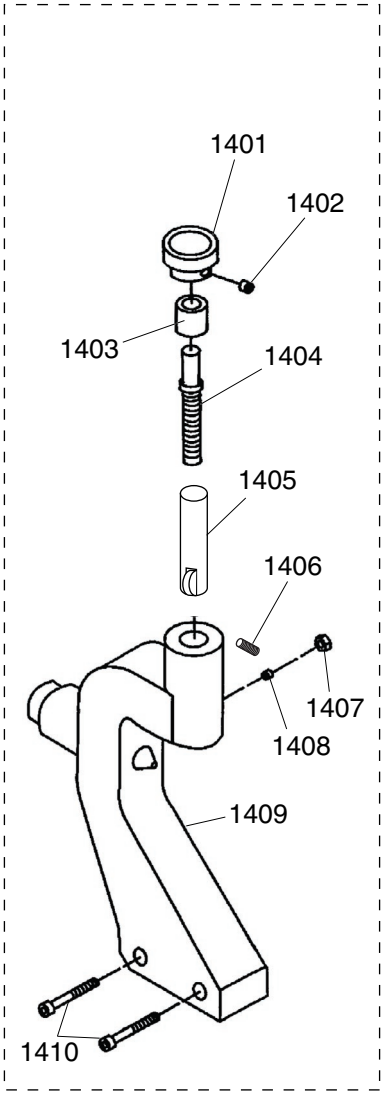
REF	PART #	DESCRIPTION
1201	P4003G1201	TRANSFORMER
1202	P4003G1202	FUSE HOLDER 2A
1203	P4003G1203	CIRCUIT BREAKER 230V/400V
1204	P4003G1204	THERMAL RELAY
1205	P4003G1205	CONTACTOR GSC1-1801
1206	P4003G1206	CONTACTOR JZC3 40D
1207	P4003G1207	GROUND TERMINAL BLOCK
1208	P4003G1208	TERMINAL BLOCK 12-POLE

REF	PART #	DESCRIPTION
1209	P4003G1209	TERMINAL BLOCK 20-POLE
1210	P4003G1210	STOP RESET BUTTON
1211	P4003G1211	POWER ON BUTTON
1212	P4003G1212	JOG BUTTON
1213	P4003G1213	POWER INDICATOR LIGHT
1214	P4003G1214	WORK LIGHT TERMINAL BLOCK
1215	P4003G1215	HALOGEN WORK LIGHT

Steady & Follow Rest Assemblies



1300



1400

REF	PART #	DESCRIPTION
1300	P4003G1300	COMPLETE STEADY REST ASSY
1301	P4003G1301	HANDLE
1302	PSS02M	SET SCREW M6-1 X 6
1303	P4003G1303	BUSHING
1304	P4003G1304	SPECIAL SCREW
1305	P4003G1305	FINGER BEARING W/ SLEEVE
1306	PSS03M	SET SCREW M6-1 X 8
1306-1	PSS25M	SET SCREW M6-1 X 20
1306-2	PN01M	HEX NUT M6-1
1307	P4003G1307	UPPER BODY CASTING
1309	PSS25M	SET SCREW M6-1 X 20
1310	PN01M	HEX NUT M6-1
1311	P4003G1311	LOWER BODY CASTING
1312	P4003G1312	LOCK PIN
1313	P4003G1313	LOCK BOLT M8-1.25
1314	PN09M	HEX NUT M12-1.75

REF	PART #	DESCRIPTION
1315	PW06M	FLAT WASHER 12MM
1316	P4003G1316	CLAMP PLATE
1317	PB43M	HEX BOLT M12-1.75 X 75
1318	PW01M	FLAT WASHER 8MM
1319	P4003G1319	KNOB M8-1.25
1400	P4003G1400	COMPLETE FOLLOW REST ASSY
1401	P4003G1401	HANDLE
1402	PSS02M	SET SCREW M6-1 X 6
1403	P4003G1403	BUSHING
1404	P4003G1404	SPECIAL SCREW
1405	P4003G1405	FINGER BEARING W/ SLEEVE
1406	PSS03M	SET SCREW M6-1 X 8
1407	PN01M	HEX NUT M6-1
1408	PSS25M	SET SCREW M6-1 X 20
1409	P4003G1409	BODY CASTING
1410	PSB35M	CAP SCREW M8-1.25 x 60

Grizzly Industrial, Inc. WARRANTY CARD

Name _____

Street _____

City _____ State _____ Zip _____

Phone # _____ Email _____ Invoice # _____

Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?

____ Advertisement ____ Friend ____ Catalog
____ Card Deck ____ Website ____ Other:

2. Which of the following magazines do you subscribe to?

____ Cabinet Maker
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Modeltec
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Practical Homeowner
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

3. What is your annual household income?

____ $20,000-$29,000 ____ $30,000-$39,000 ____ $40,000-$49,000
____ $50,000-$59,000 ____ $60,000-$69,000 ____ $70,000+

4. What is your age group?

____ 20-29 ____ 30-39 ____ 40-49
____ 50-59 ____ 60-69 ____ 70+

5. How long have you been a woodworker/metalworker?

____ 0-2 Years ____ 2-8 Years ____ 8-20 Years ____ 20+ Years

6. How many of your machines or tools are Grizzly?

____ 0-2 ____ 3-5 ____ 6-9 ____ 10+

7. Do you think your machine represents a good value? _____ Yes _____ No

8. Would you recommend Grizzly Industrial to a friend? _____ Yes _____ No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
Note: *We never use names more than 3 times.* _____ Yes _____ No

10. Comments: _____

_____

_____

CUT ALONG DOTTED LINE

FOLD ALONG DOTTED LINE

Place
Stamp
Here

GRIZZLY INDUSTRIAL, INC.
P.O. BOX 2069
BELLINGHAM, WA 98227-2069

FOLD ALONG DOTTED LINE

Send a Grizzly Catalog to a friend:

Name_____

Street_____

City_____State_____Zip_____

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

WARRANTY AND RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number," which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

grizzly.com
TOOL WEBSITE

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